Maintenance Tool

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Chapter 1 Overview of Maintenance using Maintenance Tool

For the maintenance of Hitachi Data Ingestor, maintenance commands are used as a maintenance tool on the maintenance PC of which available to communicate with a node.

The following chapters describe how to provide various types of maintenance functions including settings and information collection using the maintenance tool for each function.

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1.1 Equipment required when using Maintenance Tool

- Maintenance PC
- LAN cables (Crossover cables)

Connect the maintenance PC. For details about the connection in the cluster configuration in the site where a management LAN IP-SW provided by (HDS) is introduced, refer to "A.2.3 LAN Cable A.2.3.1 (2) Connecting the private maintenance ports".

In the site where the management LAN IP-SW prepared by the customer is introduced, in the BMC direct connection configuration, or in the single node configuration, the maintenance PC connects directly to the private maintenance port.

1.2 Preparation for the Maintenance Tool

This section describes the necessary settings and requirements for the maintenance PC when using the maintenance tool.

Table 1.2-1 List of Settings and Requirements for the Maintenance PC

#	Item	Description	Reference Page
1	Requirements for the maintenance PC	Describes the necessary specifications of the maintenance PC.	Maintenance Tool "1.2.1 Requirements for the maintenance PC" (MNTT 01-0030)
2	Prior confirmation of the maintenance PC	Describes the items to be confirmed prior to setting the maintenance PC.	Maintenance Tool "1.2.2 Prior confirmation of the maintenance PC" (MNTT 01-0040)
3	IP address settings for the maintenance PC	Performs the IP address settings for the maintenance PC.	Maintenance Tool "1.2.3 Setting the IP addresses of the maintenance PC" (MNTT 01-0041)
4	MTU value settings for the maintenance PC	Performs the MTU value of the maintenance PC.	Maintenance Tool "1.2.4 Setting the MTU value for the maintenance PC" (MNTT 01-0100)
5	Negotiation settings for the maintenance PC	Performs negotiation settings of the maintenance PC.	Maintenance Tool "1.2.5 Setting negotiation for the maintenance PC" (MNTT 01-0150)

NOTE:
- If virus check software is installed on your maintenance PC, change settings of the software so that it does not perform a virus check during maintenance operation.
- As part of screen saver settings, if you have clicked "Power (○) …", and set "Turn off hard disks", "System standby", and "System stops", change these settings to "None" for not stop Windows OS during the maintenance operation.

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1.2.1 Requirements for the maintenance PC

Table 1.2.1-1 shows the requirements for the maintenance PC.

NOTE: VSP Gx00/VSP Fx00 cannot be maintained by the maintenance PC described in Table 1.2.1-1. You need to provide another maintenance PC for VSP Gx00/VSP Fx00. For the detailed specifications, see “Maintenance PC section” in the VSP Gx00/VSP Fx00 maintenance manual.

Table 1.2.1-1 Requirements for the Maintenance PC (1/2)

#	Item		Description	
1	Hardware	Type	i386 architecture based PC (PC/AT compatible)	
		CPU	1 GHz or more is required (2 GHz or more recommended).	
		Memory capacity	1.26 GB or more according to the capacity required by the OS (2GB or more recommended).	
		HDD capacity	99 GB or more is required for collecting dumps and logs.	
		Optical drive	At least one optical disk that can read or write data to CD-R/RW or to DVD-R/RW is required.	
		Screen resolution	1024 dots x 768 dots or more	
		Keyboard and mouse	Required	
		LAN port	Required. 100Base-TX or more is required.	
		USB port	At least one USB 1.1 or more is required.	
		Power supply	AC power supply must be used. (Do not use the maintenance PC with running a battery during maintenance.)	
2	Software	OS	Windows Vista SP1, and Windows 7 Professional or later.	
		Application	Browser (*1)	Internet Explorer 7, Internet Explorer 8, Internet Explorer 11
			Disk Array Subsystem (AMS2000 series, MSS, and HUS100 series) control (not required if the target disk array subsystem is USP V, USP VM, VSP, VSP G1000, or HUS VM because SVP is used for that case)	Hitachi Storage Navigator Modular 2 (V9.00 or later) (There is JRE Version restriction to use HSNM2. Refer to the manual of each disk array device for details.)
			Remote console (*1)	JRE1.8 or later (*2)
			Communication software / Terminal emulator that supporting ssh2	Communication software supporting ssh2. (Such as PuTTY or Tera Term) (*3)
			Decompression software	Software to unzip tgz files (e:g.: Lhaca, Lhaz.) (*4)
			IPMIUTIL	IPMIUTIL Ver 2.4.0 (*5)

*1: 64bit versions are not supported. Even in case of using version OS, use 32bit version.
*2: The JRE download from http://java.com/en/download/, and then install JRE. For more installation about JRE, refer to java download page.
*3: When using maintenance commands, log into a node via ssh. Therefore, communication software supporting ssh2, such as PuTTY or Tera Term must be installed. In addition, for transferring files, the maintenance PC must be set to use scp. Also, when using Tera Term, use the Version4.70 or later.
*4: Installing decompression software for unzipping log files (tgz files) is required.
*5: The application requited to maintain D51B-2U. IPMIUTIL is stored in the OS installation media. Set the installation media in the optical drive on the maintenance PC and run IPMIUTIL.

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Table 1.2.1-1 Requirements for the Maintenance PC (2/2)

#	Item		Description
3	Others	RS232-C cable	In the site where a management LAN IP-SW provided by (HDS) is introduced, it is used when setting VLAN of the Management LAN IP-SW. For details, refer to "Installation 'Chapter 4 Overview of VLAN Setting Procedure for the Management LAN IP-SW' (INST 04-0000)". When the maintenance port cannot be used, some maintenance work is performed by connecting the maintenance PC to the serial interface connector. For details, refer to Maintenance Tool "1.2.6 Serial connection procedure for the maintenance PC" (MNTT 01-0190.)
		Monitor/Keyboard	This might be borrowed from the system administrator as an alternative means in case the remote console connection is not possible.
		Key for the front bezel	In the case of purchasing the front bezel, use this item to remove and install the front bezel.

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1.2.2 Prior confirmation of the maintenance PC

Before execute setting for the maintenance PC with the procedures in later description, check the contents in the following.

(1) Check if the virus checking software is installed in the maintenance PC.
Open “Control panel” and confirm the display method shown on the upper left of the window at the first stage. If the display method is either “Large icons” or “Small icons”, click “Action center”. Then select “Security” tab in the displayed “Action center” window and check “Virus protection” item.
If the virus software is installed in the maintenance PC, change the setting to prevent from running the virus check during the maintenance operation.

(2) Check the setting to prevent from stopping Windows OP automatically during the maintenance operation.
Open “Control Panel”, and confirm the display method shown on the upper left of the window at the first stage. If the display method is either “Large icons” or “Small icons”, select “Change when the computer sleeps” of “Power Options. If the display method is “Category”, click “Hardware and Sound” and then select “Change when the computer sleeps” of “Power Options”. Confirm that “Turn off the display” and “Put the computer to sleep” are set to [Never] in the displayed “Select a power plan” window. In other cases, change to [Never] from each drop-down list and click [Save changes].

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1.2.3 Setting the IP addresses of the maintenance PC

This section describes how to set the IP address of the maintenance PC which is connected to a private maintenance port of each node.

[In case the IPv4 address is set]

If the label has been attached, IP address of the private maintenance port in each node (only the own node in the case of single node configuration) can be confirmed from the label, and then it is able to allocate the address of which belongs to the same network segment as that IP address to the IP address of the maintenance PC. If it cannot be confirmed with the label, request the system administrator to execute pmctl command on the both nodes (only the own node in the case of single node configuration), and then you must allocate the address of which belongs to the same network segment as that IP address to the IP address of the maintenance PC. For the reference place in User's Guide describing the details about pmctl command, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 6 'pmctl'' (GENE 00-0060)".
Normally, use the following IP address for the maintenance PC:

10.0.0.XXX

However, you must set another network segment if your customer uses the above network segment. In that case, you must set any of the following segments:

"192.168.0.XXX", "192.168.233.XXX", "172.23.211.XXX" or "10.197.181.XXX"

For "XXX", set a value within a range of 1 to 253, which does not compete with the private maintenance port of the node. Because "XXX" to be allocated to the private maintenance port of the node at the time of OS installation will be set the consecutive number within 50 to 253, it is recommended to set the value within the range of 1 to 49, which does not compete with the maintenance port of the node.
In addition, the net mask must be specified as "255.255.255.0".

[In case the IPv6 address is set]

Basically, since only the IPv4 address is used in maintenance, the IPv6 address is not used. However, if connection by the IPv6 address is instructed or requested, set automatic allocation of the IPv6 address for the maintenance PC.

The procedures for setting the IP addresses of the maintenance PC are shown below.

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(1) Display “Network Connections” window.

(a) For Windows Vista

(i) Open “Control Panel”, select Classic View on the left side of the window, and double-click “Network and Sharing Center”. In case of selecting “Control Panel Home”, click “Network and Internet”, and click “Network and Sharing Center” in the displayed page.

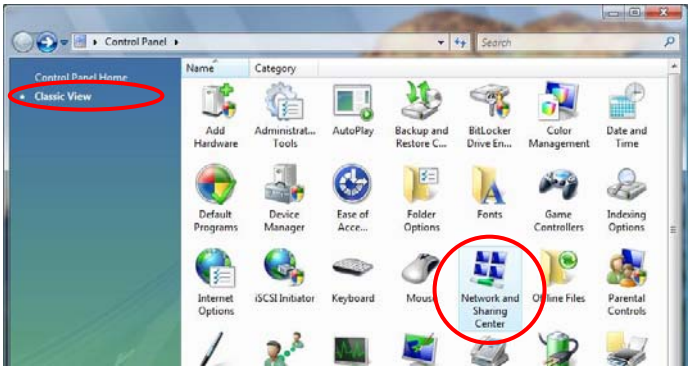

Figure 1.2.3-1 Control Panel window

(ii) The “Network and Sharing Center” window is displayed as in Figure 1.2.3-2. Click “Manage network connections”.

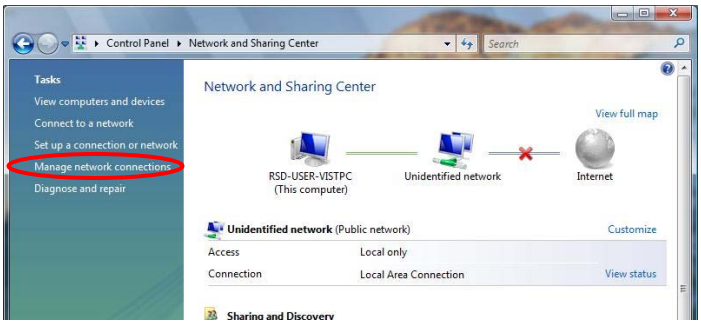

Figure 1.2.3-2 Network and Sharing Center window

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(b) For Windows 7

(i) Open [Control Panel] and check the display method shown on the upper right side of the window.
If the display method is “Large icons” or “Small icons”, click “Network Center”.
If the display method is “Category”, click “Network and Internet” and then double click “Network and Sharing Center”.

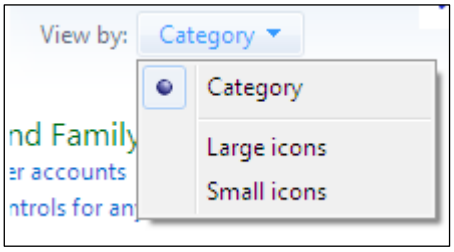

Figure 1.2.3-3 Control Panel window

(ii) The “Network and Sharing Center” window is displayed as in Figure 1.2.3-4.
Click “Change adapter settings”.

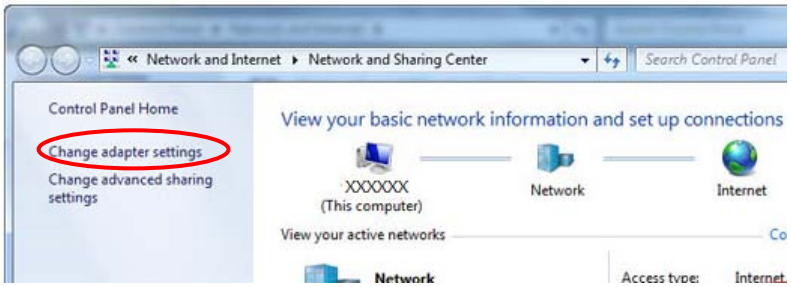

Figure 1.2.3-4 Network and Sharing Center window

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(2) The Network Connections window is displayed as in Figure 1.2.3-5.
Right-click “Local Area Connection” and select “Properties”.
If a dialogue of user account control is displayed, click [Continue] and execute the subsequent procedure.

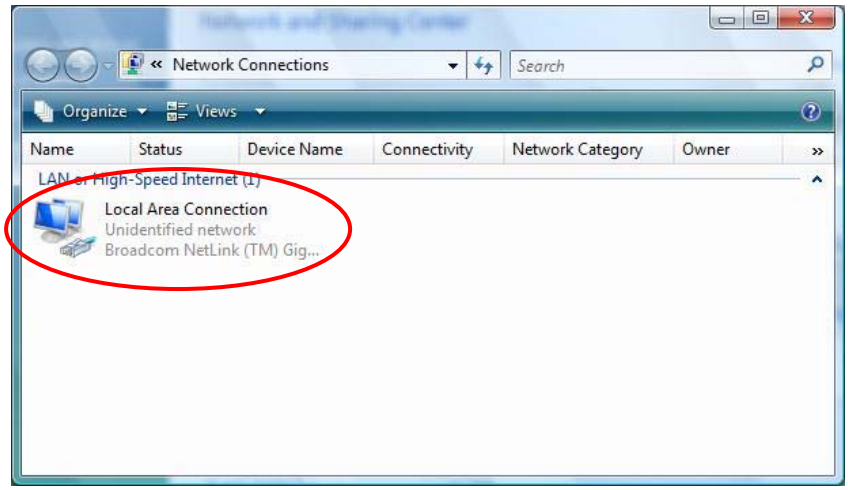

Figure 1.2.3-5 Network Connections window

(3) The Local Area Connection Properties window is displayed.
Refer to (3-1) in case IPv4 is set and refer to (3-2) in case IPv6 is set.

(3-1) As shown in Figure 1.2.3-6, click “Internet Protocol Version 4 (TCP/IPv4)” and click [Properties] button.

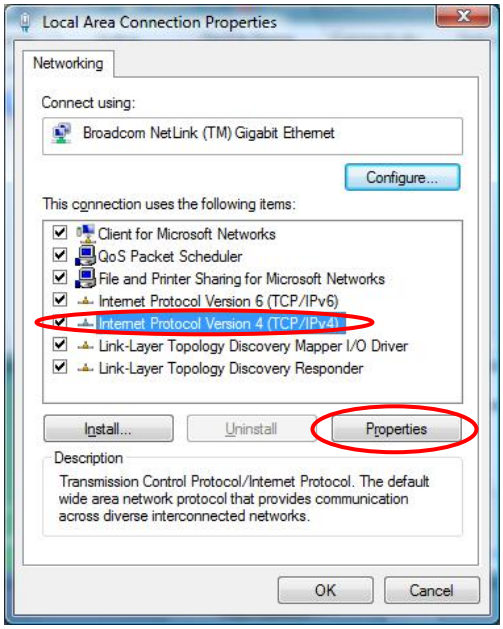

Figure 1.2.3-6 Local Area Connection Properties window (in case IPv4 is set)

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(3-2) In case IPv6 is set, as shown in Figure 1.2.3-7, click “Internet Protocol Version 6(TCP/IPv6)” and click [Properties] button.

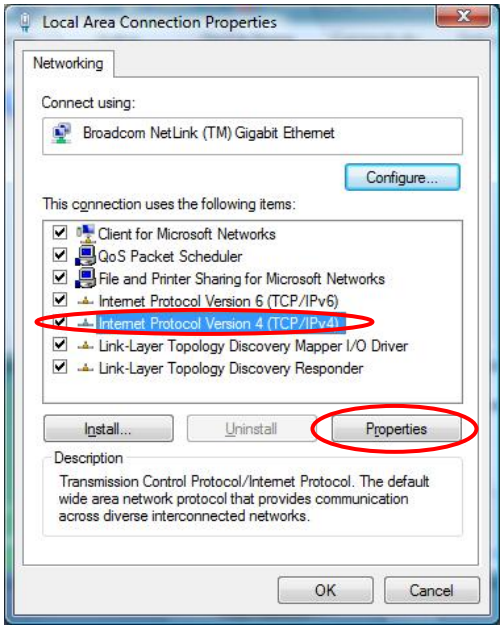

Figure 1.2.3-7 Local Area Connection Properties window (in case IPv6 is set)

(4) Refer to (4-1) in case (3-1) is executed in procedure (3) and refer to (4-2) in case (3-2) is executed.

(4-1) The Internet Protocol Version 4 (TCP/IPv4) Properties window is displayed as in Figure 1.2.3-7. Check-mark “Use the following IP address” and set “IP address”, “Subnet mask”, “Default gateway”, “Preferred DNS server” and “Alternate DNS server” according to Table 1.2.3-1, and click [OK] button.

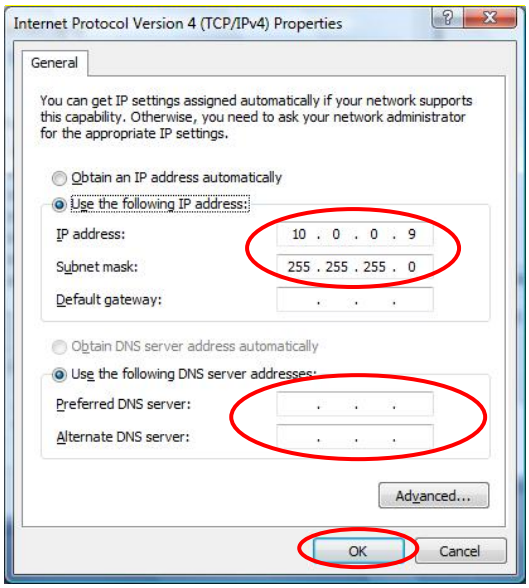

Figure 1.2.3-8 Internet Protocol Version 4 (TCP/IPv4) Properties window

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Table 1.2.3-1 IP Address Settings of the Maintenance PC (in case IPv4 is set)

#	Setting item 1	Setting value	Remarks
1	Use the following IP address	Check the [option] button.	—
2	IP address	10.0.0.XXX	*1
3	Subnet mask	255.255.255.0 (Fixed)	—
4	Default gateway	Blank	*2
5	Use the following DNS server addresses	Check the [option] button.	—
6	Preferred DNS server	Blank	—
7	Alternate DNS server	Blank	—

*1: For the IP address of the maintenance PC, set an IP address in the same segment so that you can connect the maintenance PC to the maintenance port of a node. Note that you must check in advance that the IP address to be set is not duplicated. For the acquisition of IP address for the maintenance port of a node, refer to the opening described in “1.2.3 Setting the IP address of the maintenance PC”.

*2: Because the network segment to which the IP address of a private maintenance port of a node belongs and the one to which the IP address of a maintenance PC belongs are the same, the value for the default gateway must be blank.

(4-2) The Internet Protocol Version 6 (TCP/IPv6) Properties window is displayed as in Figure 1.2.3-9. Check “Obtain an IP address automatically”, set “Preferred DNS server” and “Alternate DNS server” according to Table 1.2.3-2, and click [OK] button.

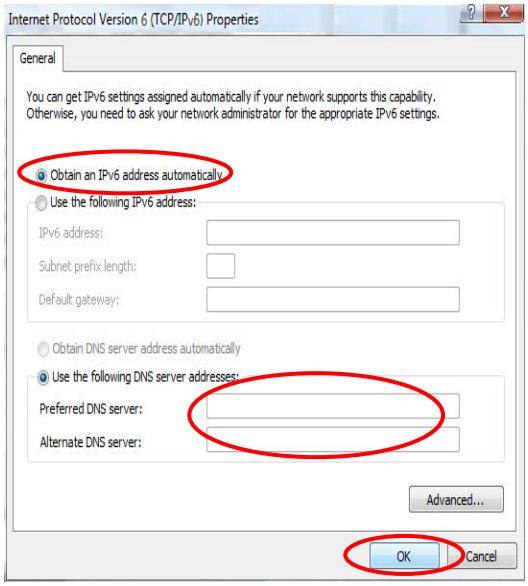

Figure 1.2.3-9 Internet Protocol Version 6(TCP/IPv6) Properties window

Table 1.2.3-2 IP Address Settings of the Maintenance PC (in case IPv6 is set)

#	Setting item 1	Setting value	Remarks
1	Use the following DNS server addresses	Check the [option] button.	—
2	Preferred DNS server	Blank	—
3	Alternate DNS server	Blank	—

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1.2.4 Setting the MTU value for the maintenance PC

This section describes how to set the maximum value of packets (MTU value) that can be sent at the same time between the maintenance PC and the network.

NOTE: If the registry sets incorrectly, the system might not start.
Be careful when you perform the operation according to the procedure below.

(1) Display [Execute by specifying a file] window.
From the Start menu, click [Start], [Accessories], and select [Run...].

(2) The “Run” window is displayed as in Figure 1.2.4-1.
Enter “regedit” in the “Open” text box, and click [OK] button.
If the user account control dialog (Changes permitted?) is displayed, click [Yes] and take the following procedure.

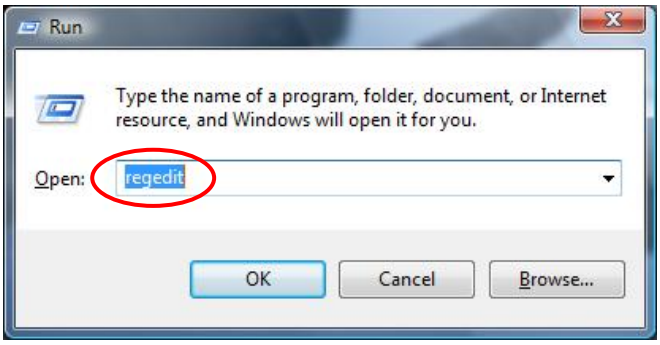

Figure 1.2.4-1 Execute window

(3) The Registry Editor window1 is displayed as in Figure 1.2.4-2.
In the registry tree, click “HKEY_LOCAL_MACHINE”, “SYSTEM”, “CurrentControlSet”, “Services”, “Tcpip”, “Parameters” and “Interfaces” in that order.

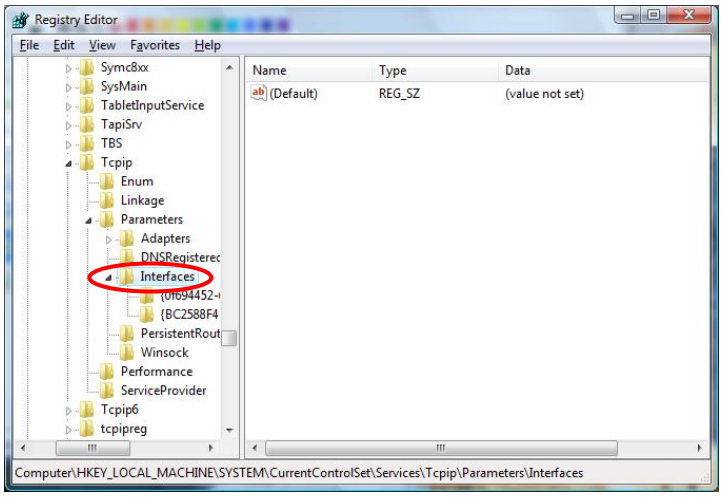

Figure 1.2.4-2 Registry Editor window1

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(4) Registry keys under the “Interfaces” registry key are displayed.
Click the displayed registry key and proceed to step (5). If there are multiple registry keys, select one at a time.

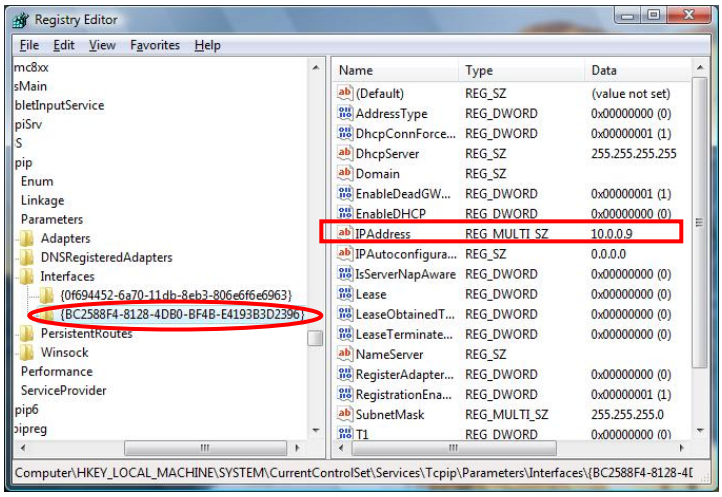

Figure 1.2.4-3 Registry Editor window2

(5) To the right of the Registry Editor window2 is displayed as in Figure 1.2.4-3, a list of registry setting values is displayed.
Confirm that the data in the “IP Address” is the IP address set in Maintenance Tool “1.2.3 Setting the IP addresses of the maintenance PC” (MNTT 01-0041).
If there are multiple registry keys and it is difficult to check the IP address, press [Ctrl] + [F] to open the Search window, enter the IP address set in Maintenance Tool “1.2.3 Setting the IP addresses of the maintenance PC” (MNTT 01-0041) to search and check the IP address.
If “IP Address” is different from the set IP address or it does not exist, return to step (4), and click another registry key under the “Interface” registry key.
If “IP Address” matches the specified IP address, proceed to step (6).

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(6) Confirm that “MTU” exists in the list of registry setting values in “Registry Editor window3” shown in Figure 1.2.4-4.
- If “MTU” exists, proceed to step (9).
- If “MTU” does not exist, proceed to step (7).

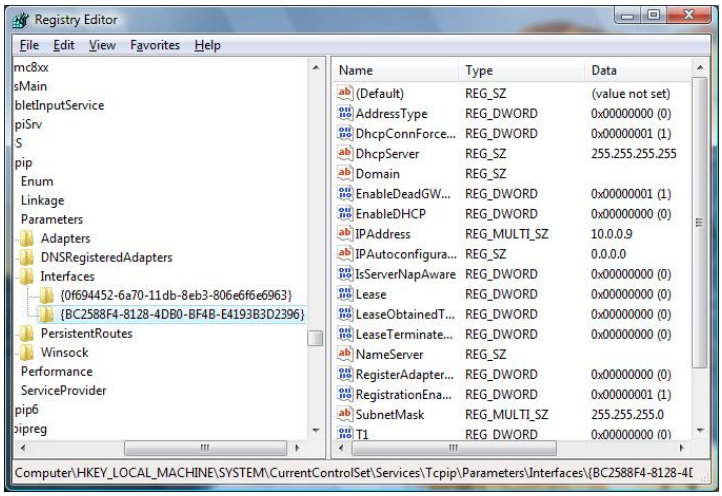

Figure 1.2.4-4 Registry Editor window3

(7) Right click any place within the range of Figure 1.2.4-5 Registry editor window 4.
In case of Windows Vista, click [New]-[DWORD], and for Windows 7, click [New]-[DWORD (32bit) Value].

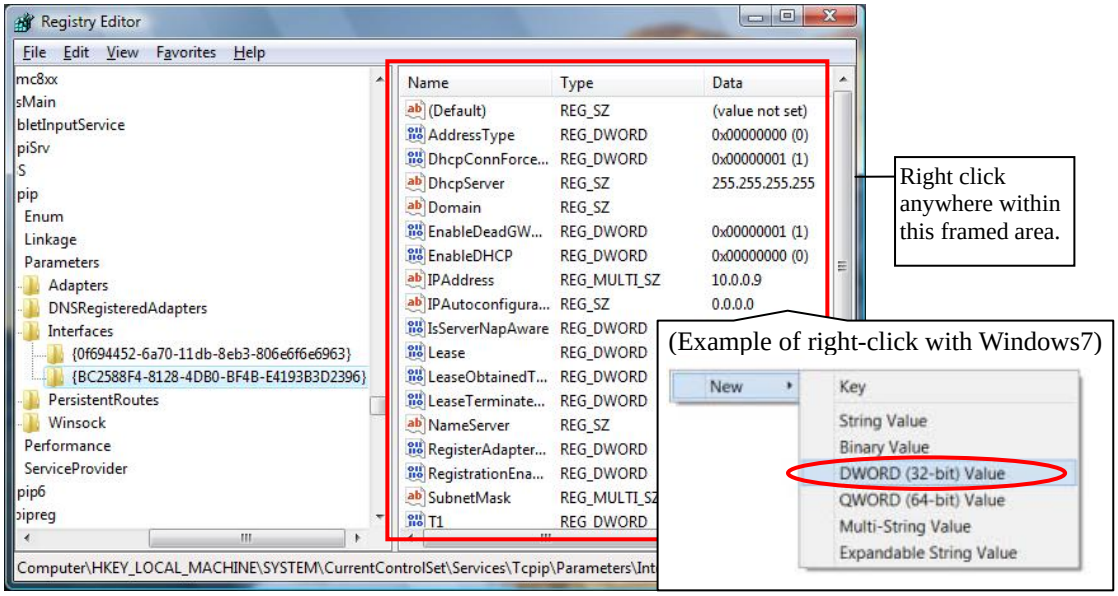

Figure 1.2.4-5 Registry Editor window4

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(8) “New Value #1” is created.
Right-click “New Value #1” and select “Change Name”, and then change the name to “MTU”.

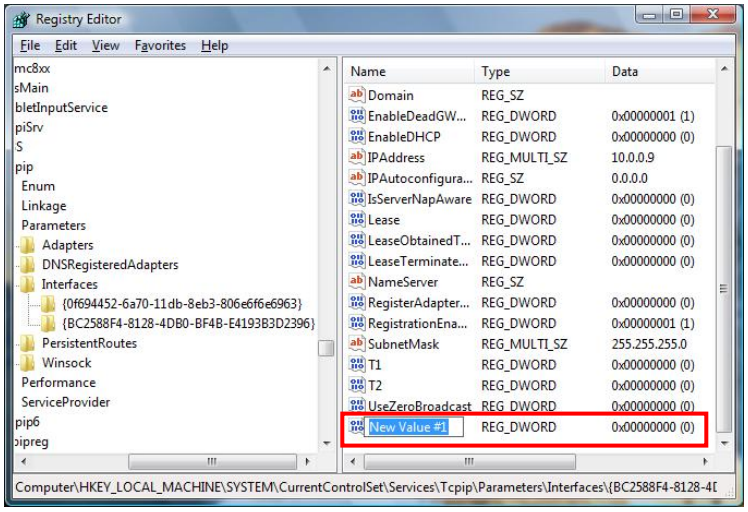

Figure 1.2.4-6 Registry Editor window5

(9) Right-click “MTU” and select “Modify”.

(10) The Edit DWORD Value window is displayed as in Figure 1.2.4-7.
Select “Decimal” of “Notation”, enter “1500” in “Value data”, and then click [OK] button.
When "1500" is already input into "Value data", please click "Cancel" button.

NOTE: If MTU already exists, write down the original MTU value so that you can return the MTU value to the original value after the maintenance operation.

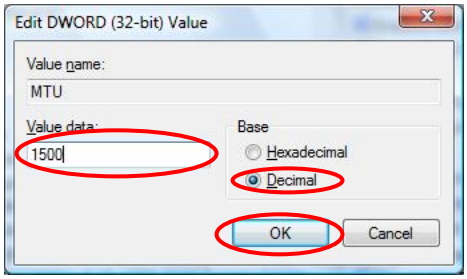

Figure 1.2.4-7 Edit DWORD Value window

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(11) The Registry Editor window6 is displayed as in Figure 1.2.4-8.
Confirm that the value in “Data” of “MTU” on the table is the value you entered.
Close the Registry Editor window after the confirmation.

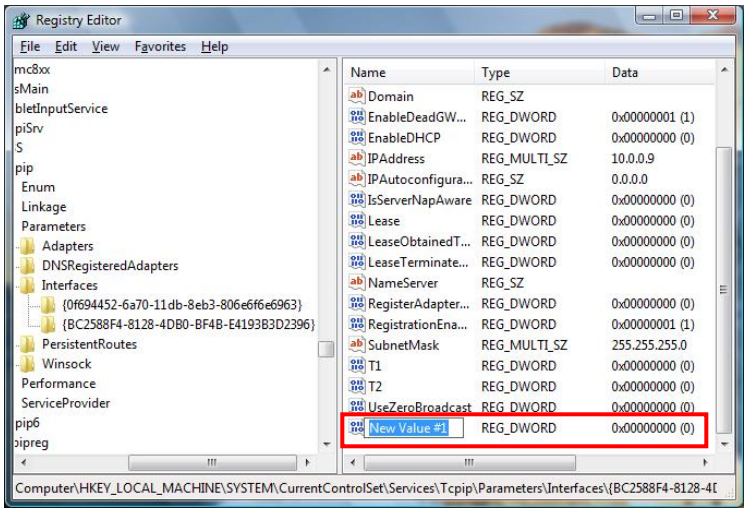

Figure 1.2.4-8 Registry Editor window6

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1.2.5 Setting negotiation for the maintenance PC

This section describes how to set the link speed and duplex system automatically (Auto negotiation) between the maintenance PC and the network.

NOTE: If two or more NICs are displayed, you must confirm the device to use for maintenance operation in the Network Properties window in advance.

(1) Display [Device Manager] window.

(a) For Windows Vista
In the Control Panel, open “System” and click “Device Manager”.

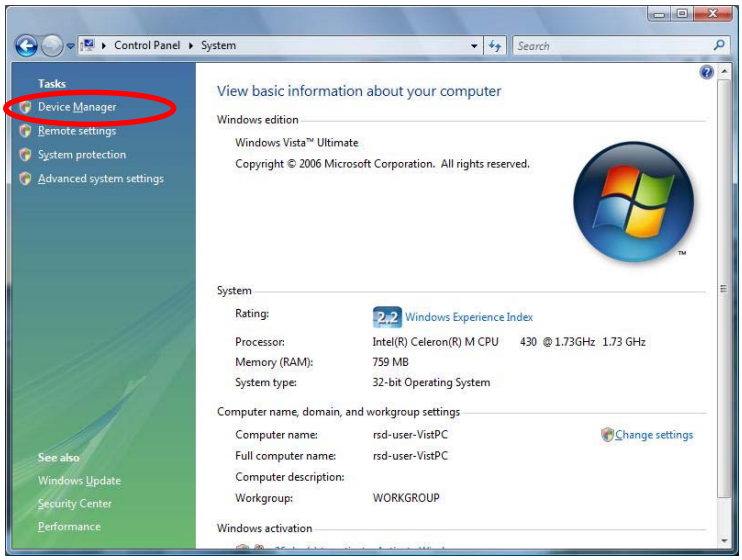

Figure 1.2.5-1 System Properties window

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(b) For Windows 7
Open [System] of [Control Panel] and check the display method shown on the upper right side of the window.
If the display method is “Large icons” or “Small icons”, click “Device Manager”.
If the display method is “Category”, click “System and Security” and then click “Device Manager” from the displayed window.

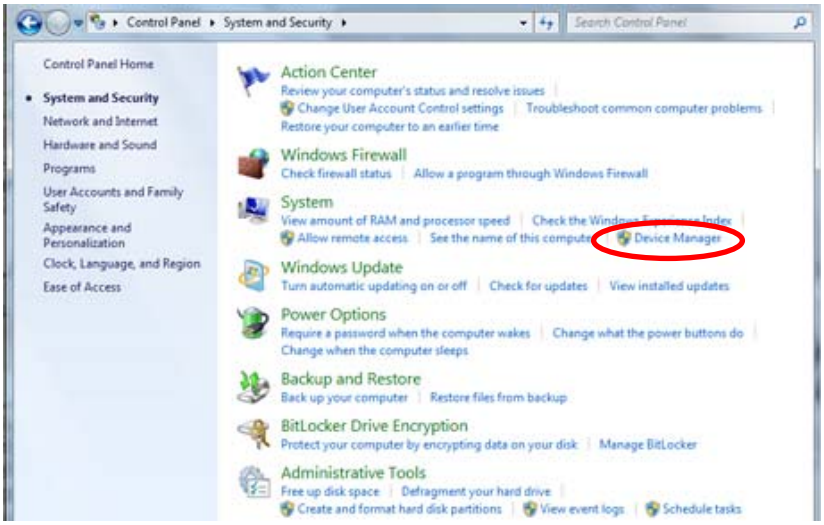

Figure 1.2.5-2 System property window (Display method: Category)

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(2) The Device Manger window is displayed as in Figure 1.2.5-3.
From “Network adapters”, right-click the device to use as the maintenance LAN port and select “Properties”.

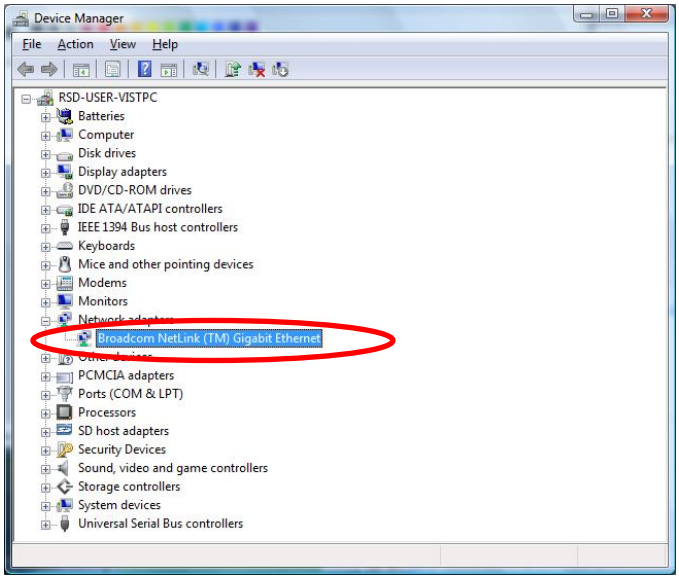

Figure 1.2.5-3 Device Manager window

(3) The Properties window of the selected network adapter is displayed as in the Figure 1.2.5-4.

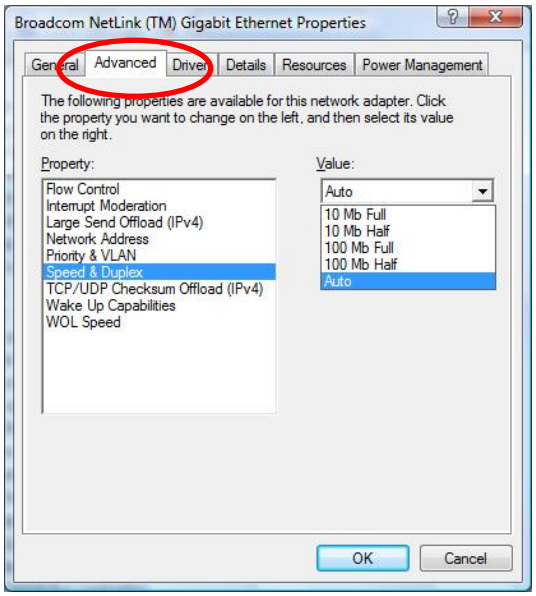

Figure 1.2.5-4 Properties window of Network Adapter

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(4) Select an item related to the settings of Link Speed/ Duplex Mode from the items displayed in “Property”. Select “Auto” (Auto Negotiation mode) from the “Value”, and then click [OK] button.

NOTE: Items in “Property”, values in “Value” and the name of the tab for the settings of Link Speed/ Duplex Mode might vary depending on network adapter manufacturers.

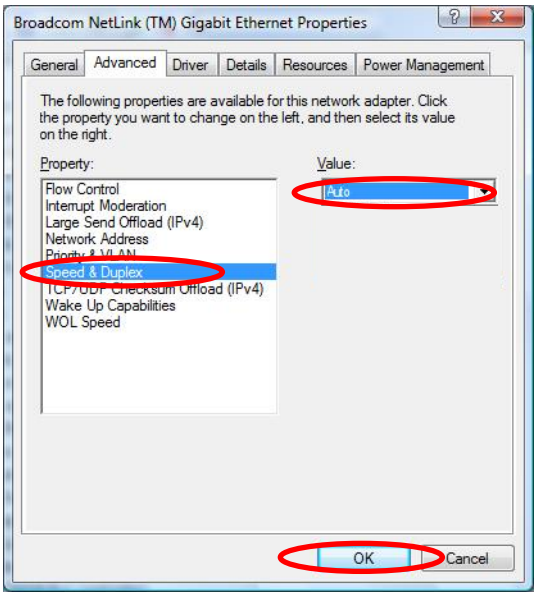

Figure 1.2.5-5 Advanced window

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1.2.6 Serial connection procedure for the maintenance PC

In the case where a maintenance port cannot be used during maintenance operations and so on, operations such as verifying the startup of the OS or running commands can be performed by connecting the maintenance PC to the serial port with a RS232 cross cable. The connection procedure is as follows.

NOTE:
- Since the maintenance PC is connected to only one node, changing the connection node may be required depending on the command to be executed.
- Files cannot be transferred while the maintenance PC is connected to the serial port.

(1) Connect the maintenance PC and a node with RS-232C cross cable as shown in Figure 1.2.6-1. For the connection part, refer to "A.2.2 Back side."

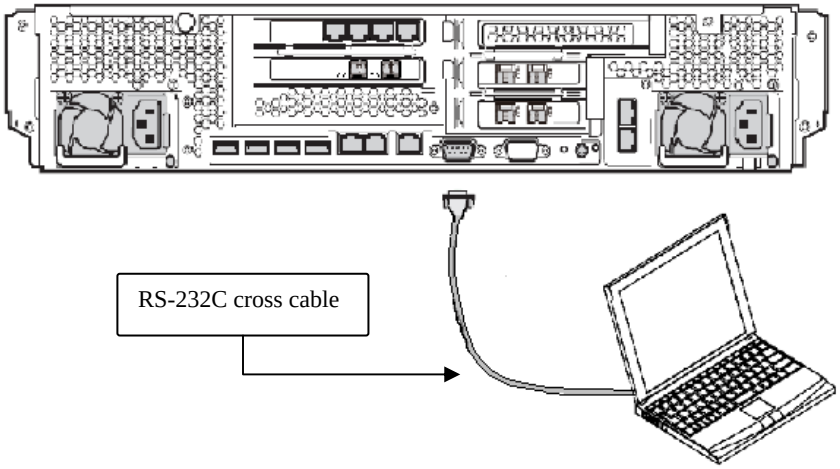

Figure 1.2.6-1 Connection Example of Maintenance PC and Node

(2) Activate a communication software supporting serial connection (PuTTY, Tera Term, etc.) on the maintenance PC.
After activating PuTTY, select [Serial] in "Connection type", specify [115,200] bps in "Speed", click the [Open] button and then the maintenance PC is connected to the node.

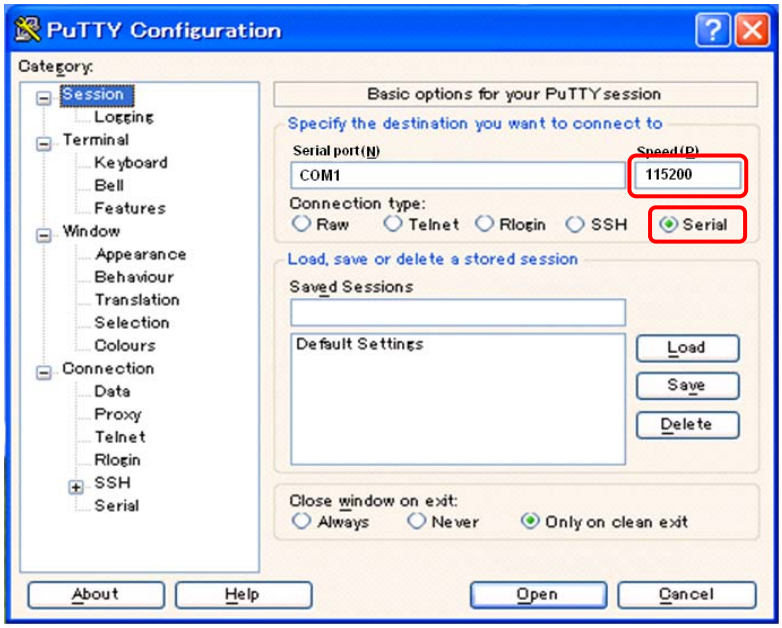

Figure 1.2.6-2 Serial Connection Setting Example Using PuTTY

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1.3 Procedures for Operating Commands

This section describes how the maintenance personnel prepare for operating commands and execute commands.

1.3.1 Before using commands

Maintenance personnel use maintenance tool commands for the maintenance of Hitachi Data Ingestor.

To use the commands, maintenance personnel must log into a node via ssh. For this reason, communication software supporting ssh2 or serial connection such as PuTTY or Tera Term must be installed in the maintenance PC before using commands.
Use ssh2 for the ssh protocol version. Furthermore, perform settings so that scp can be used for transferring files.

1.3.2 Logging in to a node for executing commands

Maintenance personnel must connect the maintenance PC to execute maintenance tool commands.
For details about the connection in the site where a management LAN IP-SW provided by (HDS) is introduced, refer to "A.2.3 LAN Cable A.2.3.1 (2) Connecting the private maintenance ports".
In the site where the management LAN IP-SW prepared by the customer is introduced, in the BMC direct connection configuration, or in the single node configuration, the maintenance PC connects directly to the private maintenance port. When using Remote console, the maintenance PC connects directly to the BMC port.
For the remote console, refer to "B.1.4 Connection Confirmation of the Remote Console"

When using remote console or serial port, a message "Hint: Press Ctrl + F2 to go to the Login screen." or "Hint: Press Alt + F2 to go to the Login screen." may be displayed instead of the login prompt on the top of the window. In this case, press either [Ctrl] + [F2] key or [Alt] + [F2] key (*) along with the displayed message to switch to the login prompt display.

*: Note that the remote console has the restriction with [Alt] key.
When using the remote console in CR210HM/CR220SM, perform the following three steps.
i Press [Alt] + [Z] key and hold [Alt] key down.
ii Press either [F1] or [F2] key solely to switch the window.
iii Press [Alt] + [Z] key and release [Alt] key.
In the case of D51B-2U, refer to "QuantaGrid Series D51B-2U Technical Guide".

Maintenance personnel use communication software supporting ssh2 or serial connection such as PuTTY or Tera Term, which is already prepared for the maintenance PC, to log into a node. Because the connection is done with the password authentication, the ssh key is not required for this logging in.
Table 1.3.2-1 shows information to be entered when maintenance personnel log into a node.

Table 1.3.2-1 Information to be Entered when Logging in to a Node

#	Item	Information
1	Address	Specify the IP address of the private maintenance port.
2	Account	Enter "service".
3	Password	Enter "tfsw-4826".

NOTE: The information in Table 1.3.2-1 must be used only by maintenance personnel. Maintenance personnel must be careful for handling this information so that it is not leaked.

Note that commands that can be used by maintenance personnel are described in Maintenance Tool "2.1 List of Commands to be Used" (MNTT 02-0000).

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1.3.3 Executing commands

This section describes how to execute commands.

(1) Start a communication software supporting ssh2 or serial connection such as PuTTY or Tera Term to connect to the target node.
To use PuTTY, double-click “PUTTY.EXE” to start it.

NOTE:
- In the configuration where a management LAN IP-SW provided by (HDS) is introduced and in such cases as you want to compare results of both nodes, start communication software programs for both nodes.
- In the following cases, replacement of maintenance PC occurs in each of the nodes and therefore the communication software programs cannot be started for both of the nodes, therefore, in such cases as you want to compare results of both nodes, record the result of one of the nodes and compare it with the result of the other node.
  - In the configuration where a management LAN IP-SW prepared by the customer is introduced
  - RC-232C cross cable is used for the connection
  - Remote console is used

(2) Enter the account name and the password to log into it.
Refer to #2 and #3 in Table 1.3.2-1 for the account name and the password.

NOTE:
- It takes about 2 minutes maximum until the login prompt window is displayed when the customer site uses DNS server or NIS server.
- If you cannot log into it, review the settings, cables, and connection status.
- If “LOG: unexpected EOF on client connection” is displayed after “[Product Serial Number] login” in the login screen, press [Enter] key.

If you logging in with the maintenance mode or logging in after terminating the maintenance mode, a warning message is displayed because the ssh key for each of them is different. Figure 1.3.3-1 shows an example when PuTTY is used. In the case the following window is displayed, it becomes available to log into it by clicking [Yes] button.
Others communication software that support ssh2 also occur the same phenomenon, so take an appropriate measurement in accordance with the manual of the tool to be used.

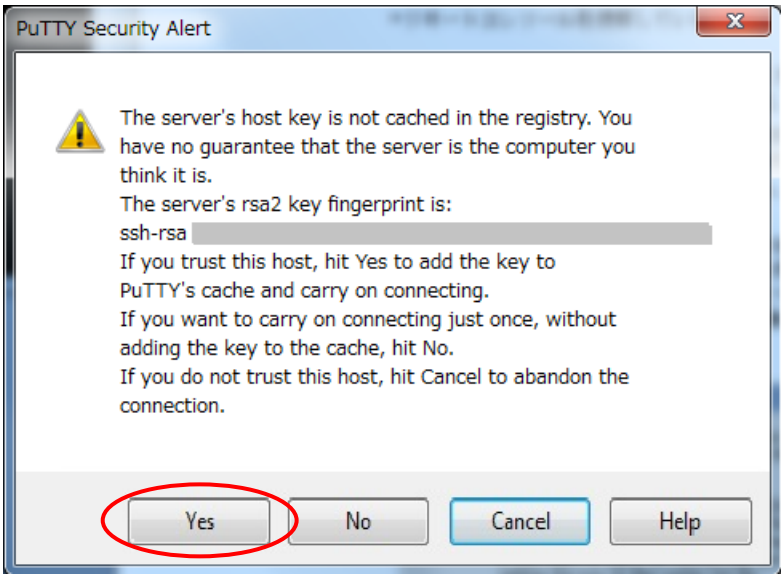

Figure 1.3.3-1 Warning window (In the case of using PuTTY)

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If logging by connecting to the maintenance port, the following phenomenon may occur.

- Select mode window which sets the address of the management port may be displayed instead of the command window. In this case, enter “9” in the KAQM05163-I message displayed in the Select mode window and press [Enter] key to complete the Select mode window. Then the command prompt is displayed.

(3) Verify that the boot of the OS of the node that you logged in is complete. If it is not verified, refer to “Startup Confirmation of the OS by Using KVM” and verify the boot is complete.

(4) Use the sudo command to execute commands.
Figure 1.3.3-2 shows an example of executing the clstatus command.

Example: When the clstatus command is executed:

```
$ sudo clstatus

--Cluster Status--
Cluster name     : Clster00
Cluster status   : ACTIVE

--Node Status--
node 0(DFBQLNBX)
Node name        : DFBQLNBX
Node status      : UP

node 1(DGBQLNBX)
Node name        : DGBQLNBX
Node status      : UP

--Resource Group Status--
Resource group name      :  DFBQLNBX
Resource group status    :  Online/No error
Running node             :  DFBQLNBX

Resource group name      :  DGBQLNBX
Resource group status    :  Online/No error
Running node             :  DGBQLNBX
```

Figure 1.3.3-2 Example of Executing the clstatus Command

For detailed procedures for executing maintenance commands, refer to the procedure for executing each command.

1.3.4 Logging out from the node when the execution of commands terminates

When the maintenance operations are completed, you must log out from the node.
Execute the “exit” command in the window of the communication software. If you cannot execute the command, close the window directly.

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1.3.5 Commands used for transferring files

Maintenance personnel might use a file transfer command when uploading files to the OS for updating firmware, or when collecting failure information, and downloading files to the maintenance PC.
Use the scp command to transfer files. (For PuTTY, use the pscp command.)
The procedure for transferring files is described as follows. An example when using PuTTY as the communication software is shown here.

For details about uploading files to the OS, refer to Maintenance Tool "1.3.5 (1) Uploading files to the OS" (MNTT 01-0230).

For details about downloading files to the maintenance PC, refer to Maintenance Tool "1.3.5 (2) Downloading files to the maintenance PC" (MNTT 01-0240).

(1) Uploading files to the OS

(a) Obtain the file to be uploaded to the OS from the system administrator or the developer before starting this operation.

(b) Store the file in the maintenance PC.

(c) As shown in Figure 1.3.5-1, execute the pscp command on the command prompt window of the maintenance PC to upload the file to the OS.

```
C:\>pscp -scp -unsafe <full-path-name-of-file- to-be-uploaded> service@<IP-address-of-private-maintenance-port>:
```

Figure 1.3.5-1 Example when Uploading a File to the OS

NOTE:
- If the file uploading command failed, verify the setting of the tool in use (such as the environmental variables).
- Make sure to specify the -unsafe option because if you specify no option, an error occurs when using a wildcard (*).
- A confirmation message shown in Figure 1.3.5-2 may be output. In this case, enter "y" and press [Enter] key.

```
The server's host key is not cached in the registry. You have no guarantee that the server is
the computer you think it is.
The server's rsa2 key fingerprint is:
ssh-rsa xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
If you trust this host, enter "y" to add the key to PuTTY's cache and carry on connecting.
If you want to carry on connecting just once, without adding the key to the cache, enter "n".
If you do not trust this host, press Return to abandon the connection.
Store key in cache? (y/n) y
```

Figure 1.3.5-2 Confirmation message example of ssh key storage

(d) When you are required to enter a password, enter the password for the account of the maintenance personnel written in #3 in Maintenance Tool "Table 1.3.2-1 Information to be Entered when Logging in to a Node" (MNTT 01-0200).

(e) The file is uploaded to the home directory of the OS (/home/service). If the uploading fails, failure factors are displayed in the window. Remove those factors, and perform the procedure again from step (c).

(f) Refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200) to log into the target node, execute the ls command to confirm that the file was uploaded.

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(2) Downloading files to the maintenance PC

(a) As shown in Figure 1.3.5-3, execute the pscp command on the command prompt window of the maintenance PC to download files to the maintenance PC.
Note that the full path name of files to be downloaded to the maintenance PC is displayed while executing commands. Therefore, specify the displayed path.

```
C:\>pscp -scp -unsafe service@<IP-address-of-private-maintenance-port>:<full-path-name-of-files-to-be-downloaded-to-maintenance-OS> <directory-path-name-to-be-stored-file-to-maintenance-PC>
```

Figure 1.3.5-3 Example of downloading a file to the maintenance PC

NOTE:
- If the file uploading command failed, verify the setting of the tool in use (such as the environmental variables).
- Make sure to specify the -unsafe option because if you specify no option, an error occurs when using a wildcard (*).
- A confirmation message shown in Figure 1.3.5-4 may be output. In this case, enter “y” and press [Enter] key.

```
The server’s host key is not cached in the registry. You have no guarantee that the server is the computer you think it is.
The server's rsa2 key fingerprint is:
ssh-rsa xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
If you trust this host, enter “y” to add the key to PuTTY’s cache and carry on connecting.
If you want to carry on connecting just once, without adding the key to the cache, enter “n”.
If you do not trust this host, press Return to abandon the connection.
Store key in cache? (y/n) y
```

Figure 1.3.5-4 Confirmation message example of ssh key storage

(b) When you are required to enter a password, enter the password for the account of the maintenance personnel shown in #3 of Maintenance Tool “Table 1.3.2-1 Information to be Entered when Logging in to a Node” (MNTT 01-0200).

(c) Confirm that the file was downloaded to the directory in the maintenance PC specified in step (a). If the downloading fails, failure factors are displayed in the window. Remove those factors, and perform the procedure again from step (a).

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Chapter 2 Details of Maintenance Tools

2.1 List of Commands to be Used

Maintenance personnel can perform various maintenance operations by using maintenance commands.
Table 2.1-1 below shows the list of commands to be used.
Note that the "Cluster" and "Single" columns in the table indicate whether the command can be used only by maintenance personnel, or by both the system administrator and maintenance personnel in the cluster configuration and the single node configuration.

Table 2.1-1 Commands to be Used (1/8)

No.	Command	Overview	Refer to	Cluster	Single
1	alulist	Displays LU information about the disk array subsystem side.	Maintenance Tool "2.35 Displaying the LU Information in the Disk Array Subsystem (alulist)" (MNTT 02-2090)	Maintenance personnel	—
2	arping	Check whether the IP address conflict of the Management port with other devices connected to the management LAN	Maintenance Tool "2.99 Check the IP address conflict of the Management port (arping)" (MNTT 02-5190)	Maintenance personnel	Maintenance personnel
3	ast_setup	Set the Mode code and Product code after the update of the hardware maintenance agent.	Maintenance Tool "2.62 MIACAT Setup Wizard (ast_setup)" (MNTT 02-3340)	Maintenance personnel	Maintenance personnel
4	bbuautolearnget	The set value for automatically relearn of the internal RAID battery is displayed.	Maintenance Tool "2.68 Displaying the Set Value for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnget)" (MNTT 02-3650)	—	Maintenance personnel
5	bbuautolearnset	The setting for automatically relearn of the internal RAID battery is performed.	Maintenance Tool "2.67 Setting for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnset)" (MNTT 02-3620)	—	Maintenance personnel
6	bburelearnget	Displays the relearn schedule of cache backup module and the setting status (enabled/disabled) of schedule execution.	Maintenance Tool "2.86 Displaying Relearn Schedule of Cache Backup Module and Setting Status (enabled/disabled) of Schedule Execution (bburelearnget)" (MNTT 02-4500)	—	Maintenance personnel
7	bburelearnset	Set the relearn schedule of cache backup module and enable/disable schedule execution.	Maintenance Tool "2.87 Setting Relearn Schedule of Cache Backup Module and Enabling/disabling Schedule Execution (bburelearnset)" (MNTT 02-4530)	—	Maintenance personnel
8	bmcctl	Displays and sets BMC LAN information.	Maintenance Tool "2.18 Setting BMC LAN Information (bmcctl)" (MNTT 02-1210)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
9	bmcselget	Collects BMC system event logs. The information to be collected is the system event log for the other side node.	Maintenance Tool "2.22 Collecting the BMC System Event Log (bmcselget)" (MNTT 02-1470)	•Maintenance personnel	—
10	bootstatus	Checks the OS boot status.	Maintenance Tool "2.94 OS Boot Check (bootstatus)" (MNTT 02-5000)	—	Maintenance personnel

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Table 2.1-1 Commands to be Used (2/8)

No.	Command	Overview	Refer to	Cluster	Single
11	cachedbadbbuget	The set value for the cache write mode when the battery level of the internal RAID battery falls is displayed.	Maintenance Tool "2.70 Displaying the Set Value for the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuget)" (MNTT 02-3710)	—	•Maintenance personnel •System administrator
12	cachedbadbbuset	The cache write mode when the battery level of the internal RAID battery falls is set.	Maintenance Tool "2.69 Setting the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuset)" (MNTT 02-3680)	—	•Maintenance personnel •System administrator
13	ccchk.sh	Execute the progress confirmation of Consistency Check of the data in the virtual disk.	Maintenance Tool "2.57 Progress Confirmation of Consistency Checking of the Data in the Virtual Disk (ccchk.sh)" (MNTT 02-3140)	Maintenance personnel	Maintenance personnel
14	ccp	Acquires and displays the RC information of a node.	Maintenance Tool "2.61 RC Information Acquisition (ccp)" (MNTT 02-3270)	Maintenance personnel	Maintenance personnel
15	ccstart.sh	Executes Consistency Check of the data in the virtual disk.	Maintenance Tool "2.93 Consistency Checking of the Data in the Virtual Disk (ccstart.sh)" (MNTT 02-4620)	Maintenance personnel	Maintenance personnel
16	clstart	Starts the cluster.	Maintenance Tool "2.48 Starting the Cluster (clstart)" (MNTT 02-2670)	•Maintenance personnel •System administrator	—
17	clstatus	Displays the status of a node or a resource group.	Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040)	•Maintenance personnel •System administrator	—
18	clstop	Stops the cluster.	Maintenance Tool "2.49 Stopping the Cluster (clstop)" (MNTT 02-2720)	•Maintenance personnel •System administrator	—
19	dhcpget	Displays the DHCP setting of the network interface.	Maintenance Tool "2.96 Displaying the DHCP Setting of the Network Interface (dhcpget)" (MNTT 02-5030)	—	•Maintenance personnel •System administrator
20	dhcpset	Executes the DHCP setting of the network interface.	Maintenance Tool "2.97 DHCP Setting of Interface (dhcpset)" (MNTT 02-5070)	—	•Maintenance personnel •System administrator
21	diskfreeget	Displays the free space and the whole capacity of the User Disk.	Maintenance Tool "2.64 Displaying the Free Space Amount and the Whole Capacity Amount of User Disk (diskfreeget)" (MNTT 02-3430)	—	•Maintenance personnel •System administrator
22	dumpcheck	Checks the existence of the unconverted dump file.	Maintenance Tool "2.21.3 Confirm the existence of unconverted dump file (dumpcheck)" (MNTT 02-1461)	Maintenance personnel	Maintenance personnel
23	dumpconvert	Converts the unconverted dump file.	Maintenance Tool "2.21.4 Converting dump file (dumpconvert)" (MNTT 02-1464)	Maintenance personnel	Maintenance personnel
24	dumpdel	Deletes unnecessary dump files.	Maintenance Tool "2.21.2 Deleting dumps (dumpdel)" (MNTT 02-1440)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator

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Table 2.1-1 Commands to be Used (3/8)

No.	Command	Overview	Refer to	Cluster	Single
25	dumpset	Sets whether to perform dump collection when a node is reset.	Maintenance Tool "2.20 Setting whether to Collect Dumps (dumpset)" (MNTT 02-1360)	•Maintenance personnel •System administrator	—
26	eraselog	Erases the log generated when the command was executed.	Maintenance Tool "2.82 Deleting Logs Created in Executing Commands (eraselog)" (MNTT 02-4320)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
27	externalpgminst	Installs programs provided by a vendor.	Maintenance Tool "2.39 Installing an External Program (externalpgminst)" (MNTT 02-2290)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
28	externalpgmlist	Displays the installation condition of programs provided by vendors.	Maintenance Tool "2.40 Checking the Installation Status of External Programs (externalpgmlist)" (MNTT 02-2330)	Maintenance personnel	Maintenance personnel
29	fchbafwlist	Checks the HBA firmware version.	Maintenance Tool "2.24 Checking the HBA Firmware Version (fchbafwlist)" (MNTT 02-1600)	Maintenance personnel	Maintenance personnel
30	fchbafwupdate	Updates the HBA firmware.	Maintenance Tool "2.25 Updating the HBA Firmware (fchbafwupdate)" (MNTT 02-1630)	Maintenance personnel	Maintenance personnel
31	forcelurelease	Executes the forced cancellation of the LU access protection for the cluster management LU and all user LUs.	Maintenance Tool "2.45 Forced Release of LU access Protection for the Cluster Management LU and All Users LU (forcelurelease)" (MNTT 02-2560)	Maintenance personnel	—
32	fpctl	Controls the FC path function.	Maintenance Tool "2.23 Controlling FC Paths (fpctl)" (MNTT 02-1500)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
33	fpioctl	Displays settings and the setting status of I/O related parameters.	Maintenance Tool "2.38 Configuring the FC Path I/O-Related Parameters (fpioctl)" (MNTT 02-2220)	Maintenance personnel	•Maintenance personnel •System administrator
34	fpoffline	Switches to the FC path offline.	Maintenance Tool "2.10 Switching the FC Path to Offline (fpoffline)" (MNTT 02-0690)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
35	fponline	Switches to the FC path online.	Maintenance Tool "2.9 Switching the FC Path to Online (fponline)" (MNTT 02-0590)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
36	fpstatus	Displays the status and the configuration of the FC path set for a node.	Maintenance Tool "2.5 Displaying the FC Status (fpstatus)" (MNTT 02-0280)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
37	hwstatus	Displays the hardware status of a node.	Maintenance Tool "2.3 Displaying the Hardware Status (hwstatus)" (MNTT 02-0140)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator

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Table 2.1-1 Commands to be Used (4/8)

No.	Command	Overview	Refer to	Cluster	Single
38	iflist	Displays interface information set for the management port and the data port.	Maintenance Tool "2.4 Displaying the Network Status (iflist)" (MNTT 02-0200)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
39	internalraidfwget	Confirms the firmware version of the built-in RAID controller.	Maintenance Tool "2.46 Confirming the Built-in RAID Controller Firmware Version (internalraidfwget)" (MNTT 02-2610)	Maintenance personnel	Maintenance personnel
40	initchk.sh	Confirms the progress of the virtual disk initialization.	Maintenance Tool "2.95 Confirming the Progress of Virtual Disk Initialization (initchk.sh)" (MNTT 02-5010)	Maintenance personnel	Maintenance personnel
41	internalraidfwupdate	Updates the firmware of the built-in RAID controller.	Maintenance Tool "2.47 Updating the Built-in RAID Controller Firmware (internalraidfwupdate)" (MNTT 02-2640)	Maintenance personnel	Maintenance personnel
42	licenseanalyze	Analyzes license keys.	Maintenance Tool "2.33 Analyzing a License Key (licenseanalyze)" (MNTT 02-1990)	Maintenance personnel	Maintenance personnel
43	licenselist	Displays a list of licenses.	Maintenance Tool "2.31 Displaying Licenses (licenselist)" (MNTT 02-1880)	Maintenance personnel	Maintenance personnel
44	licenseset	Performs the license key settings.	Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930)	Maintenance personnel	Maintenance personnel
45	log.sh	Writes the internal log of Embedded RAID controller into the file.	Maintenance Tool "2.55 Embedded RAID Controller Internal Log Acquisition (log.sh)" (MNTT 02-3080)	Maintenance personnel	Maintenance personnel
46	luioschedulectl	Displays the settings of the I/O scheduler or reloads the settings.	Maintenance Tool "2.98 Displaying Settings of I/O Scheduler and Reloading Settings (luioschedulectl)" (MNTT 02-5140)	•Maintenance personnel •System administrator	—
47	lumaplist	Displays the correspondence between the mapped user LU and the information of the disk array (model name and serial number).	Maintenance Tool "2.65 User LU Mapping Display (lumaplist)" (MNTT 02-3470)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
48	miacatget	Displays the version of the current hardware maintenance agent.	Maintenance Tool "2.59 Check the Version Information of Hardware Maintenance Agent (miacatget)" (MNTT 02-3200)	Maintenance personnel	Maintenance personnel
49	miacatupdate	Updates the hardware maintenance agent	Maintenance Tool "2.60 Updating the Hardware Maintenance Agent (miacatupdate)" (MNTT 02-3230)	Maintenance personnel	Maintenance personnel
50	mngiflist	Displays information about the management port information.	Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800)	Maintenance personnel	Maintenance personnel
51	mngnegmodeget	Displays the negotiation mode of the management port.	Maintenance Tool "2.13 Displaying the Management Port Negotiation Mode (mngnegmodeget)" (MNTT 02-0900)	Maintenance personnel	Maintenance personnel

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Table 2.1-1 Commands to be Used (5/8)

No.	Command	Overview	Refer to	Cluster	Single
52	mngnegmodeset	Sets the negotiation mode of the management port.	Maintenance Tool "2.14 Setting the Management Port Negotiation Mode (mngnegmodeset)" (MNTT 02-0930)	Maintenance personnel	Maintenance personnel
53	mngrouteadd	Adds routing information of the management port.	Maintenance Tool "2.16 Adding the Management Port Routing Information (mngrouteadd)" (MNTT 02-1000)	Maintenance personnel	Maintenance personnel
54	mngroutedel	Deletes routing information of the management port.	Maintenance Tool "2.17 Deleting the Management Port Routing Information (mngroutedel)" (MNTT 02-1100)	Maintenance personnel	Maintenance personnel
55	mngroutelist	Displays routing information of the management port.	Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960)	Maintenance personnel	Maintenance personnel
56	nasboot	Starts the OS of the other side system node.	Maintenance Tool "2.27 Starting the OS of the Other Side Node (nasboot)" (MNTT 02-1700)	•Maintenance personnel •System administrator	—
57	nasipneigh	Confirms the correspondence of the IP address to the MAC address in the specified IP protocol.	Maintenance Tool "2.81 Displaying IP address-MAC address Correspondence (nasipneigh)" (MNTT 02-4290)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
58	nasnetstat	Displays network information.	Maintenance Tool "2.79 Displaying Network Setting Information (nasnetstat)" (MNTT 02-4210)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
59	nasping	Displays the connection status with the specified host.	Maintenance Tool "2.7 Checking Network Connection Status (nasping)" (MNTT 02-0410)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
60	nasreboot	Reboots the OS of this side node.	Maintenance Tool "2.29 Rebooting the OS of This Side Node (nasreboot)" (MNTT 02-1790)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
61	nasshutdown	Stops the OS of this side node.	Maintenance Tool "2.28 Terminating the OS of This Side Node (nasshutdown)" (MNTT 02-1740)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
62	nastraceroute	Displays the route to the specified host.	Maintenance Tool "2.80 Displaying the Route to Reach a Specified Host (nastraceroute)" (MNTT 02-4250)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
63	ndstart	Starts up the node.	Maintenance Tool "2.50 Node Start Up (ndstart)" (MNTT 02-2760)	•Maintenance personnel •System administrator	—
64	ndstop	Terminates the node.	Maintenance Tool "2.51 Node Termination (ndstop)" (MNTT 02-2810)	•Maintenance personnel •System administrator	—

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Table 2.1-1 Commands to be Used (6/8)

No.	Command	Overview	Refer to	Cluster	Single
65	nncreset	Resets the other side system node.	Maintenance Tool "2.30 Resetting the OS of the Node (nncreset)" (MNTT 02-1840)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
66	oslogget	Collects logs.	Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300)	Maintenance personnel	Maintenance personnel
67	ownmngifedit	Sets information about the management port information.	Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840)	Maintenance personnel	Maintenance personnel
68	peerstatus	Displays the status of the other side node.	Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130)	•Maintenance personnel •System administrator	—
69	pmctl	Displays/sets the private maintenance LAN port.	Maintenance Tool "2.41 Configuring a Private Maintenance LAN Port (pmctl)" (MNTT 02-2370)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
70	rbldchk.sh	Confirms the rebuilding progress of the physical disk after replacing the embedded drive.	Maintenance Tool "2.58 Confirmation of Rebuilding Progress of Physical Disk (rbldchk.sh)" (MNTT 02-3170)	Maintenance personnel	Maintenance personnel
71	rgmove	Changes the node that executing resource group.	Maintenance Tool "2.54 Changing Resource group Execution node (rgmove)" (MNTT 02-3020)	•Maintenance personnel •System administrator	—
72	rgstart	Starts up the resource group.	Maintenance Tool "2.52 Resource group Starts Up (rgstart)" (MNTT 02-2870)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
73	rgstatus	Confirms the resource group status.	Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380)	System administrator	•Maintenance personnel •System administrator
74	rgstop	Stops the resource group.	Maintenance Tool "2.53 Stopping Resource group (rgstop)" (MNTT 02-2950)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
75	rmfile	Deletes the specified file.	Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
76	routedel	Deletes the routing information.	Maintenance Tool "2.85 Deleting the Routing Information (routedel)" (MNTT 02-4430)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
77	routelist	Displays the list of routing information	Maintenance Tool "2.84 Displaying the List of Routing Information (routelist)" (MNTT 02-4380)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
78	secureshellfulctl	Settings of enabling/disabling the secure shell	Maintenance Tool "2.100 Settings of enabling/disabling the secure shell (secureshellfullctl)" (MNTT 02-5220)	•Maintenance personnel	•Maintenance personnel

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Table 2.1-1 Commands to be Used (7/8)

No.	Command	Overview	Refer to	Cluster	Single
79	state.sh	Acquires the status information of the virtual disk and physical disk.	Maintenance Tool "2.56 Status Information Acquisition of the Virtual Disk and the Physical Disk (state.sh)" (MNTT 02-3110)	Maintenance personnel	Maintenance personnel
80	syseventlist	Displays the contents of the SIM log file for a node.	Maintenance Tool "2.6 Displaying SIMs on This Side (syseventlist)" (MNTT 02-0360)	Maintenance personnel	Maintenance personnel
81	syslurestore	Restores the OS disk/cluster management LU from backed up data.	Maintenance Tool "2.8 Recovering the Disk/Cluster Management LU (syslurestore)" (MNTT 02-0460)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
82	syslusave	Saves system setting information file.	Maintenance Tool "2.66 Saving System Setting Information File (syslusave)" (MNTT 02-3530)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
83	tapelist	Displays a list of tape drives.	Maintenance Tool "2.37 Displaying the Information of Tape Devices (tapelist)" (MNTT 02-2170)	•Maintenance personnel •System administrator	—
84	tapetest	The operation confirmation by the read/write to the tape device is performed.	Maintenance Tool "2.71 Operation Confirmation of the Tape Device is Performed (tapetest)" (MNTT 02-3750)	•Maintenance personnel •System administrator	—
85	timeget	Displays the current time and the time zone.	Maintenance Tool "2.42 Acquisition of Time/ Time Zone (timeget)" (MNTT 02-2430)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
86	timeset	Sets the current time.	Maintenance Tool "2.43 Time Setting (timeset)" (MNTT 02-2470)	•Maintenance personnel •System administrator	•Maintenance personnel •System administrator
87	usediskinit	Sets the waiting status of the user disk initialization.	Maintenance Tool "2.83 Initializing User Disk (userdiskinit)" (MNTT 02-4330)	—	Maintenance personnel
88	versionlist	Displays the version of the installed Program Product.	Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060)	Maintenance personnel	Maintenance personnel
89	vgrcreate	Creates volume groups.	Maintenance Tool "2.88 Creating Volume Group (vgrcreate)" (MNTT 02-4570)	—	•Maintenance personnel •System administrator
90	vgrdelete	Deletes volume groups.	Maintenance Tool "2.89 Deleting Volume Group (vgrdelete)" (MNTT 02-4650)	—	•Maintenance personnel •System administrator
91	vgrexpand	Expands volume groups.	Maintenance Tool "2.90 Expanding Volume Group (vgrexpand)" (MNTT 02-4690)	—	•Maintenance personnel •System administrator

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Table 2.1-1 Commands to be Used (8/8)

No.	Command	Overview	Refer to	Cluster	Single
92	vgrlist	Displays the information of volume groups.	Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770)	—	•Maintenance personnel •System administrator
93	vgrrepair	Repairs volume groups.	Maintenance Tool "2.92 Repairing Volume Group (vgrrepair)" (MNTT 02-4870)	—	•Maintenance personnel •System administrator
94	vnaslist	HDI does not support.			
95	vnasmove	HDI does not support.			
96	vnasrestart	HDI does not support.			
97	vnasstart	HDI does not support.			
98	vnasstop	HDI does not support.			

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2.2 Displaying the Cluster Status (clstatus)

The clstatus command displays the cluster status, the node status, and the resource group status.

NOTE:
- If the clstatus command is executed while executing the processing of the cluster, node, and resource group such as cluster startup and resource group migration, the message of KAQM06052-E is displayed. In this case, execute the command again after a while.
- This is not supported in the single node configuration.

2.2.1 Command line

For the command lines of the clstatus command, the following option can be used.

clstatus [-c] {[-v] | [--] <cluster>} | -h

Table 2.2.1-1 shows the description of the options.

Table 2.2.1-1 Command Options

No.	Option	Description	Remarks
1	Omitted	Displays the cluster status, the node status, and the resource group status.	Omit the options at the time of maintenance.
2	-c	Displays the cluster status, the node status, and the resource group status by the colon (“:”) delimiter. The titles of items are not displayed. If the item itself includes a colon (“:”), display by replacing the colon of the item to a sharp (“#”). Example: Item “rg:1e” is displayed as “rg#1e”.	Use it when the special instruction is issued.
3	-v	In addition to the displayed items when omitting the options, the information of the LUs allocated to the cluster management LUs and the IP addresses of the heartbeat ports of both nodes are displayed. For the information of the LUs allocated to the cluster management LUs, the following maintenance information is displayed. • Model name of chassis to which LUs belong. • Serial number of chassis to which LUs belong. • LDEV number of LUs.	Use it when the special instruction is issued. Example: When checking the information of the cluster management LUs or when checking the IP addresses of the heartbeat ports.
4	-- <cluster> or <cluster>	Displays only the cluster status of the specified cluster name. • The character length of <cluster> is up to 22 bytes. • The following character types can be used for <cluster>. ‘0’ to ‘9’,’a’ to ‘z’, ‘A’ to ‘Z’, ‘/’, ‘.’, ‘-’, ‘_’, ‘:’, ‘@' • At the head of <cluster>, ‘_’ cannot be used. “--” determines the character string after “--” as the cluster name. Specify it when the cluster name such as “-h” and “-c” exist. “--” is not specified alone.	It is not used usually.
5	-h	Displays the command format.	KAQM14136-I is displayed at the time of execution.

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2.2.2 Output format

The output format at the time of clstatus command execution is shown in Figure 2.2.2-1, and the content of the output format is displayed in Table 2.2.2-1.

(a) At the time of omitting the options

clstatus output format

The circled numbers ① to ⑤ correspond to items 1 to 5 of Table 2.2.2-1. For each content, refer to Table 2.2.2-1.

```
--Cluster Status--                                  ①
Cluster name          : CLUSTER-A
Cluster status        : ACTIVE

--Node Status--                                     ②
node X(<hostX>)
Node name             : <Node nameX>
Node status           : UP
                                                    *1
node Y(<hostY>)                                     ③
Node name             : <Node nameY>
Node status           : UP

--Resource Group Status--                           ④
Resource group name       : <Node nameX>
Resource group status     : Online/No error
Running node              : <Node nameX>
                                                    *1
Resource group name       : <Node nameY>            ⑤
Resource group status     : Online/No error
Running node              : <Node nameY>
```

Figure 2.2.2-1 clstatus Output Format

*1: The items such as -- Node Status --, -- Resource Group Status -- displaying the status of both nodes display this side node first by recognizing the logged-in node as this side node and the other side node as the other side node. For example, when logging in node 0, node 0 is displayed first, and when logging in node 1, node 1 is displayed first.

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Table 2.2.2 shows the list of major cluster status to be used for the confirmation when maintenance operation is in progress. The below table is used for the confirmation of the cluster status before the parts replacement or before the OS termination/reboot. Node status display of the node that subjects to be maintained is in the state of node1 in the item 3 or 4 in the table, the maintenance can be done in safety.

For the details about each status, refer to Maintenance Tool "Table 2.2.2-1 Content of Output Format" (MNTT 02-0070).

The table below explains the node that subjects to be maintained as node1.

Table 2.2.2 Cluster status to be used for the confirmation when the maintenance is in progress

No.	Cluster status to be mainly confirmed	Node status display (*1)		Running node display (*1) (Resource group status display)	
		node0	node1	node0	node1
1	Cluster status before performing failover or after performing failback.	UP	UP	node0 (Online/No error)	node1 (Online/No error)
2	Cluster status after completed failover	UP	UP	node0 (Online/No error)	node0 (Online/No error)
3 (*2)	Cluster status after terminating /booting OS	UP	INACTIVE	node0 (Online/No error)	node0 (Online/No error)
4 (*3)	Cluster status when the forced failover has occurred.	UP	DOWN	node0 (Online/No error)	node0 (Online/No error)
5	Cluster status while inhibiting failover for the both nodes	UNKNOWN	UNKNOWN	node0 (Online/srmd executable error)	node0 (Online/srmd executable error)

*1: An example of when "Node name" or "Resource group name" on the side of node0 is set as "node0", and "Node name" or "Resource group name" on the side of node 1 is set as "node1".

*2: When "Node status" of the login node is "INACTIVE", the "Node status" of the other side node becomes "UNKNOWN". Therefore, it is required to log in from the other side node to confirm the status.

*3: If the OS cannot be start up by a failure, the node status becomes DOWN. However, if the forced failover is occurred, the node status stays as DOWN even if the node to be maintained is running. In this case, the display of DOWN can be read as INACTIVE.

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(b) At the time of specifying –v option

```
Output format at the time of specifying –v option

--Cluster Status--
Cluster name        : CLUSTER-A
Cluster status      : ACTIVE

--Node Status--
node X(<Host name>)
Node name           : <Node nameX>
Node status         : UP

node Y(<Host name>)
Node name           : <Node nameY>
Node status         : UP

--Resource Group Status--
Resource group name       : <Node nameX>
Resource group status     : Online/No error
Running node              : <Node nameX>

Resource group name       : <Node nameY>
Resource group status     : Online/No error
Running node              : <Node nameY>

--Cluster Management LU Information—                ⑥
Model                     : AMS
Serial number             : 83000106
LDEV number               : XXXXX(YYYY)

--Heartbeat Port IP Address--                       ⑦
node X(<Host name>)
Heartbeat port            : 172.23.211.21
node Y(<Host name>)                                 ⑧
Heartbeat port            : 172.23.211.25
```

Same as the case without options

The numbers ⑥ to ⑧ correspond to items 6 to 8 of Table 2.2.2-1. For each of content, refer to Table 2.2.2-1.

*1

Figure 2.2.2-2 clstatus Output Format

*1: The -- Heartbeat Port IP Address -- displaying the status of both nodes display this side node first by recognizing the logged-in node as this side node and the other side node as the other side node. For example, when logging in node 0, node 0 is displayed first, and when logging in node 1, node 1 is displayed first.

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Table 2.2.2-1 Content of Output Format (1/2)

No.	Item	Description	Remarks
1	--Cluster Status--		
	Cluster name	Displays the cluster name. Example: CLUSTER-A	
	Cluster status	Displays the cluster status. ACTIVE : cluster is operating INACTIVE : cluster is stopping. UNKNOWN : cluster status is unknown. DISABLE : cluster is DISABLE status. This is displayed when the failover function is disabled by a failure.	Usually, it is ACTIVE or INACTIVE. A failure might be occurred when the status is DISABLE. *1 *2 *3
2	--Node Status--		
	node X(<*Host name*>)	Displays the information of this side node in the following format. node X(<*Host name*>) node X : Unit name of this side node <*Host name*> : Host name of this side node Example: When logged into node 0: node 0(host0) When logged into node 1: node 1(host1)	*4
	Node name	Displays the name of this side node. Example: node_RG0	
	Node status	Displays status of this side node. UP : cluster on the node is operating. DOWN : node is stopped by the reset. After a while, the node starts and the status becomes UP. INACTIVE : cluster on the node is stopping. UNKNOWN : the status of the node is unknown.	A failure might be occurred when the status does not becomes UP from DOWN. *1 *2 *3 *7
3	node Y(<*Host name*>)	Displays the information of the other side node configuring the cluster. All of the display format and meanings are the same with this side node information except that it is the information of the other side node configuring the cluster.	*4 *5
	Node name		
	Node status		
4	--Resource Group Status--		
	Resource group name	Displays the resource group name of this side node with the value used in the node name. Example: node_RG0	
	Resource group status	Displays the resource group status and the error status of this side node by the slush delimiter ("/"). <*Resource group status*>/<*Error status*> Example: Online/No error For details of the status and the error status, refer to Table 2.2.2-2 and Table 2.2.2-3.	
	Running node	Displays the node name of which the resource group of this side node is operating by the value used in the node name. Example: node_RG0	It is available to check the state of failover with the node name displayed on the window. *6
5	Resource group name	Displays the information of the other side node configuring the cluster. All of the display format and meanings are the same with this side node information except that it is the information of the other side node configuring the cluster.	*6
	Resource group status		
	Running node		

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Table 2.2.2-1 Content of Output Format (2/2)

No.	Item	Description	Remarks
6	--Cluster Management LU Information--		
	Model	Displays the model name of the chassis to which the cluster management LUs belong. AMS : DF800S, DF800M, DF800H, DF800ES, DF800EM, or DF800EH AMS or specified model name : DF800EXS HUS : DF850XS, DF850S, or DF850MH USP_V : RAID600 FC USP_VM : RAID600 RK VSP : RAID700 VSP_G1000 : RAID800 HUS_VM : HM700 VSP_Gx00 : HM800(any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850(any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900)	
	Serial number	Displays the serial number of the chassis to which the cluster management LUs belongs in eight digits in decimal number. The serial number is from the second character to the 9th character of the serial number of the chassis. Example: 83000106	
	LDEV number	Displays the LDEV number of the LU allocated to the cluster management LUs in decimal number and hexadecimal number in the following format. XXXXX(YYYY) XXXXX :LDEV number (1 to 5 digits in decimal number) YYYY :LDEV number (AMS2000 series, MSS, or HUS100 series: 4 digits in hexadecimal number. USP V, USP VM, VSP, VSP G1000, VSP Gx00/VSP Fx00, and HUS_VM : 6 digits in hexadecimal number) Example: 0(0000)	Read “LEDV number” as “Internal LU number” when using AMS2000 series, MSS or HUS100 series. This is displayed as a form of “LDKC:CU:LDEV” when using USP V, USP VM, VSP, VSP G1000, VSP Gx00/VSP Fx00, and HUS_VM
7	--Heartbeat Port IP Address--		
	node X(<*Host name*>)	Displays the information of this side node in the following format. node X(<*Host name*>) node X : unit name of this side node < *Host name*> : host name of this side node Example: node 0 When logged in node 0: node 0(host0) node 1 When logged in node 1: node 1(host1)	*4
	Heartbeat port	Displays the IP address of the heartbeat port of this side node. Example: 172.23.211.21	
8	node Y(<*Host name*>) Heartbeat port	Displays the information of the other side node configuring the cluster. All of the display format and meanings are the same with this side node information except that it is the information of the other side node configuring the cluster.	*5

*1: At the time of starting the cluster, UNKNOWN is displayed until completing the start of all the OS of the node configuring the cluster (about 10 minutes at the maximum).
*2: When the clstatus command is executed in the status logged into the node that stopped the cluster service, UNKNOWN is displayed in the cluster status and the other node status, regardless of the actual status.
*3: When UNKNOWN or DISABLE is displayed in the cluster status and the other node status, log in to the running node (the other node) and execute the clstatus command again to check the cluster status, the node status, and the resource group status.
*4: The default value of the host name is the device-serial-number to be set at the time of cluster configuration. When the user set it after the cluster configuration, it becomes an optional value.
*5: The node number (node Y) of the other side node displays as “node 1” when this side node is logged into node 0, and displays as “node 0” when this side node is logged into node 1.
*6: Not displayed when the information was not acquired.
*7: If a forced failover occurs, even if the other side node is operating, the status of the other side node remains DOWN until the forced failover is recovered.

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Table 2.2.2-2 Status of Resource Group

#	Status	Description
1	Online	The resource group is operating.
2	Initializing (*1)	The resource group starts the processing (FailSafe is being processed initially).
3	Discovery (exclusivity) (*1)	The resource group starts the processing (already started or the temporary status of online processing).
4	Online Pending (*1)	The resource group starts the processing (the resource group starts the processing).
5	Offline	The resource group is stopping.
6	Offline Pending	The resource group stops the processing.
7	Online Ready (*2)	Although the resource group started the processing, the cluster is stopping. Furthermore, displayed when a failure was detected while the cluster is stopping.
8	Online Maintenance	Although the resource group is operating, the monitor is stopping. This is displayed when the monitoring function of the resource group is released. It does not perform failover automatically even if a failure occurs.
9	Internal error	FailSafe detected an internal error. (*3)

*1: The status while starting the processing of the resource group is changed in order of Initializing, Discovery Exclusivity, Online Pending, and Online.

*2: If clstatus command is executed in the state of logging in to the node of which the cluster service is stopped, “Online Ready” is displayed regardless of the actual status of resource group.

*3: Collect the OS Log, and send it to the support center. To collect the OS Log, refer to the Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

Table 2.2.2-3 Error Status of Resource Group

#	Status	Description
1	No error	The resource group is operating normally.
2	Internal error - not recoverable	Displayed when an unrecoverable internal error occurred.
3	Monitor activity unknown (*1)	An error was detected while starting or stopping the processing of the maintenance mode. When it occurs even if executing repeatedly, it is required to terminate forcibly and remove the failure factor.
4	No available nodes (*1)	A monitor error was detected in the last node of failover. It is required to terminate forcibly and remove the failure factor.
5	Node not available(exclusivity) (*1)	The cluster of the failover destination node of the resource group is stopping. It is required to terminate forcibly, and start the failover destination node. If it cannot be started, it is required to terminate the failover destination node forcibly and remove the failure factor.
6	Node unknown (*1)	Displayed when the resource group cannot start because the node status is UNKNOWN. It is required to terminate forcibly and start the target node. If it cannot start, it is required to stop the node forcibly and remove the failure factor.
7	Split resource group(exclusivity) (*1)	It was detected that the resource group is operating in duplication in the cluster. It is required to terminate the cluster forcibly and reboot the node configuring the cluster.
8	srmd executable error (*1)	The processing to start or terminate the resource group failed. It is required to terminate the resource group not being an error forcibly and remove the failure factor.

*1: For the reference place in User’s Guide describing the details about troubleshooting, refer to “General ‘Reference Place in User's Guide for Operating Procedures Table 4 ‘Troubleshooting’’ (GENE 00-0050)”. After solving failures, ask the system administrator to forcibly stop and restart the resource group to restore the status of the resource group.

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2.2.3 Execution procedure

This subsection describes the procedure for executing the clstatus command.

(1) Log in to the execution node via ssh from the maintenance PC. For the method of logging in, refer to Maintenance Tool "1.3 Procedures for Operating Commands" (MNTT 01-0200).

(2) Execute the clstatus command. Display examples of clstatus execution are shown in Figure 2.2.3-1 to Figure 2.2.3-3.

(a) At the time of omitting the option (cluster, node, and resource group are operating)

```
$ sudo clstatus

--Cluster Status--
Cluster name        : CLUSTER-A
Cluster status      : ACTIVE

--Node Status--
node 0(host0)
Node name           : node0
Node status         : UP

node 1(host1)
Node name           : node1
Node status         : UP

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node0

Resource group name       : node1
Resource group status     : Online/No error
Running node              : node1
```

This side node information
In this case, the information of node0 is displayed because it logs into node0.

The other side node information
In this case, the information of node1 is displayed because it logs into node1.

Figure 2.2.3-1 Execution Examples of clstatus command

(b) At the time of omitting the option (when (a) fails over from node0 to node1)

```
$ sudo clstatus

--Cluster Status--
Cluster name        : CLUSTER-A
Cluster status      : ACTIVE

--Node Status--
node 1(D6P67NBX)
Node name           : node0
Node status         : UP

node 0(D8P67NBX)
Node name           : node1
Node status         : UP

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node1

Resource group name       : node1
Resource group status     : Online/No error
Running node              : node1
```

Node that the resource group of node0 is operating becomes node1.

Figure 2.2.3-2 Execution Examples of clstatus command

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(c) At the time of omitting the option (when the resource group of node1 stopped by executing the ndstop node1and rgstop node1.)

```
$ sudo clstatus

--Cluster Status--
Cluster name        : CLUSTER-A
Cluster status      : ACTIVE

--Node Status--
node 1(D6P67NBX)
Node name           : node0
Node status         : UP

node 0(D8P67NBX)
Node name           : node1
Node status         : INACTIVE

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node0

Resource group name       : node1
Resource group status     : Offline/No error
Running node              :
```

The cluster of node1 is stopping.

node where the resource group of node0 is running is node0.

the resource group of node1 is stopping.

Figure 2.2.3-3 Display Examples at the Time of clstatus Execution

(d) At the time of omitting the option (perform the failover from node1 to node0 by executing ndstop novel)

```
$ sudo clstatus

--Cluster Status--
Cluster name        : CLUSTER-A
Cluster status      : ACTIVE

--Node Status--
node 1(D6P67NBX)
Node name           : node0
Node status         : UP

node 0(D8P67NBX)
Node name           : node1
Node status         : INACTIVE

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node1

Resource group name       : node1
Resource group status     : Online/No error
Running node              :  node1
```

The cluster of node1 is stopping.

node where the resource group of node0 is running is node0.

node where the resource group of node1 is running is node0.

Figure 2.2.3-4 Display Examples at the Time of clstatus Execution

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(e) At the time of specifying –v option (cluster, node, and resource group are operating)

```
$ sudo clstatus -v

--Cluster Status--
Cluster name            : CLUSTER-A
Cluster status          : ACTIVE

--Node Status--
node 0(host0)
Node name               : node0
Node status             : UP

node 1(host1)
Node name               : node1
Node status             : UP

--Resource Group Status--
Resource group name     : node0
Resource group status   : Online/No error
Running node            : node0

Resource group name     : node1
Resource group status   : Online/No error
Running node            :  node1

--Cluster Management LU Information—
Model                   : AMS
Serial number           : 83000106
LDEV number             : 0(0000)

--Heartbeat Port IP Address--
node X(<hostX>)
Heartbeat port          : 172.23.211.21
node Y(<hostY>)
Heartbeat port          : 172.23.211.25
```

displays when specifying -v option.

Figure 2.2.3-5 Display Examples at the Time of clstatus Execution

When the clstatus command terminated abnormally, the cluster status is not displayed, and the message ID is displayed. In this case, refer to Maintenance Tool "2.2.4 Command termination messages and actions to be taken" (MNTT 02-0130), and take actions.

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2.2.4 Command termination messages and actions to be taken

A message may be displayed when the clstatus command is executed. Actions to be taken against messages are described in Table 2.2.4-1 “Message IDs and Actions to be Taken”.

Table 2.2.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error has occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
2	KAQM06052-E	Another user is using a resource of the status display processing.	The parts of the resources used in the status display are occupied by another user or the occupied node stopped.	Execute the command again after waiting for a while. If the processing node stops, wait for about 15 minutes or start the stopped node.
3	KAQM06054-E	The specified cluster does not exist.(cluster name = <*cluster-name*>)	The nonexistent cluster is specified.	Specify the existing cluster, and execute the command again.
4	KAQM06116-E	An error occurred in the cluster management LU (model name = <*model name*>, serial number = <*serial number*>, LDEV number = <*LDEV number*>) or a system file, or access to the cluster management LU is being inhibited because a resource group was forcibly failed over.	A failure occurs on the cluster management LU or the system file, or the cluster management LU is in the blocked state. Otherwise, the access to the cluster management LU is inhibited because forced failover is performed for the resource group.	Write down the model name, serial number, and internal LU number that are displayed in the window. Execute the procedure described in the “C.2.2 Determination Procedure when a Failure Occurred”.
5	KAQM06145-W	The resource information update is not complete.	The resource information update is not completed.	Execute failover or failback. When an error occurs again, a new installation is needed to restore. Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
6	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify a correct parameter, and execute the command again.
7	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message “Management IP address is not set” is not output.
8	KAQM14136-I	Usage: <*command-syntax*>	Displays the command format	It is not required to take actions. Displayed when the –h option was specified. Furthermore, displayed continuously when KAQM14131-E is displayed.
9	KAQM14138-E	There are too many or too few parameters.	The parameter has excess and deficiency.	After checking the command format, specify a correct parameter, and execute the command again.
10	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
11	KAQM14178-E	This operation cannot be performed on the configuration.	This command cannot be performed in the current configuration.	—

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2.3 Displaying the Hardware Status (hwstatus)

The hwstatus command displays the hardware status of the node.

The content displayed by this command varies depending on the model. For details, refer to "B.3.1 Displaying the Hardware Status (hwstatus)".

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2.4 Displaying the Network Status (iflist)

The iflist command lists and displays the information of each network interface of the management port and the data port set in both nodes (execution node and the other side node) configuring the cluster. In the single node configuration, the command lists and displays the information of each network interface set in the local node.

NOTE:
- The information of the heartbeat, BMC port, and the maintenance port is not displayed.
- When a failure has occurred in the cluster management LU, it is terminated in error.
- When the cluster is not configured, it is terminated in error (except the single node configuration).
- The IP addresses (for management/for service) of the Virtual Server are also listed, but Virtual Server is not supported in HDI.

2.4.1 Command line

For the command lines of the iflist command, the following options can be used.

- To display the list of IPv4 and IPv6 address interface information:
  iflist [--del delimiter | -c] [-v] [interface]

- To display the list of IPv4 address interface information:
  iflist -p v4 [--del delimiter | -c] [interface]

- To display the list of IPv6 address interface information:
  iflist -p v6 [--del delimiter | -c] [interface]

- To display the command format on the standard output:
  iflist -h

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Table 2.4.1-1 shows the description of the options.

Table 2.4.1-1 Command Options

No.	Option	Description	Remarks
1	-p v4 (*1)	Specify in case IPv4 interface information is displayed.	—
2	-p v6 (*1)	Specify in case IPv6 interface information is displayed.	—
3	--del delimiter (*1)	Displays the output result of the command delimited by a specified alphanumeric character or a symbol.	One character from ASCII0x20 to 0x7e can be specified as a delimiter.
4	-c	Displays the information of each network interface set in both nodes (execution node and the other side node) configuring the cluster by the colon (“:”) delimiter. The titles of items are not displayed. In case output data includes an IPv6 address, the address is displayed in square brackets (“[]”). In case no IPv4/IPv6 is set, each item is filled with a hyphen (“-”).	Use it when the special instruction is issued.
5	-v	Displays the information of all the network interfaces. However, the information of the lower network interfaces used for link connection and link alternate is not displayed.	Use it when the special instruction is issued.
6	<interface>	Specify the network interface displaying the information. When displaying the port information, specify the port name. Port name that can be specified mng0 ethX (X: numeral value beginning from 0) agrX (X: numeral value beginning from 0) rdnX (X: numeral value beginning from 0) Character type : alphanumeric characters period (“.”) Number of characters : Within the maximum of 10 characters	Use it when the special instruction is issued. agrX is set by the link aggregated logical interface, rdnX is set by the link alternate logical interface and, the port name is set by the user.
7	-h	Displays the command format.	KAQM14136-I is displayed at the time of execution.

*1: This option can be specified in case of the OS version 3.1.0-XX or later.
For details of confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

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2.4.2 Output format

The output format at the time of iflist command execution is shown in Figure 2.4.2-1, and the content of the output format is displayed in Table 2.4.2-1.

(a) At the time of omitting the options

iflist output format (In the cluster configuration)

```
Interface              : [interface]                    1
node [X] (<Host name>)                                  2
[IPv4]
  Fixed IP addr        : [fixedIP1]
  Service IP addr      : [serviceIP1]
  Netmask              : [netmask1]
[IPv6]                                                  3
   Fixed IP addr       : [v6fixedIP1]
   Service IP addr     : [v6serviceIP1]
   Prefix length       : [prefixlen1]
node [Y] (<Host name>)                                  4
[IPv4]
  Fixed IP addr        : [fixedIP2]
  Service IP addr      : [serviceIP2]
  Netmask              : [netmask2]
[IPv6]                                                  5
   Fixed IP addr       : [v6fixedIP2]
   Service IP addr     : [v6serviceIP2]
   Prefix length       : [prefixlen2]
[Virtual Server Name]                                   6
[IPv4]                                                  7
   Service IP addr     : [serviceIP]
   Netmask             : [netmask]
[IPv6]                                                  8
   Service IP addr     : [v6serviceIP]
   Prefix length       : [prefixlen]
MTU                    : [mtu]                          9
                       .                                .
                       .                                .
                       .                                (Repeat for the number of network interfaces)
                       .                                .
                       .                                .
```

Information for one network interface

iflist output format (In the single node configuration)

```
Interface              : [interface]                    1
[IPv4]
  IP address           : [IPaddress]                    2
  Netmask              : [netmask]
[IPv6]
  IP address           : [v6IPaddress]                  3
  Prefix Length        : [prefixlen]
  MTU                  : [mtu]                          9
                       .                                .
                       .                                .
                       .                                (Repeat for the number of network interfaces)
                       .                                .
                       .                                .
```

Information for one network interface

Figure 2.4.2-1 iflist Output Format

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Table 2.4.2-1 Content of Output Format (1/3)

No.	Item	Description	Remarks
1	[interface]	When the network interface is used (set): The interface name is displayed. Example: eth0, mng0 In case of the interface which is the DHCP setting enabled, “(DHCP)”is displayed at the back of the interface name. Example: mng0(DHCP) When the network interface is not used (not set): The following is displayed by the specified options. • Without options : Not displayed. • Specifying -c option only : Not displayed. • Specifying -v option only : Displayed as “(Not used)” immediately after the interface name. • Specifying both -v and -c options : Displayed as “Not used” immediately after the interface name and the colon (“:”).	*1
2	node [X] (<*Host name*>)	Displays the unit name of the execution node and the corresponding host name. Example: node 0(DFBQLNBX)	*2, *3
	[IPv4]	Displays the IPv4 setting title of node [X] (a local node in the single configuration).	*2, *4, *5
	In the cluster configuration: [fixedIP1] In the single node configuration: [IPaddress]	Displays the fixed IP address set for node [X] (a local node in the single configuration). When the fixed IP address cannot be displayed, the following status is displayed according to the status. Invalid (None): Displayed when the value is not acquired.	*2, *5
	[serviceIP1]	Displays the virtual IP address set for node [X]. When the virtual IP address cannot be displayed, the following status is displayed according to the status. - : Displayed when the virtual IP address is not set. Unknown : Displayed when the information is not acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	*2, *3, *5
	In the cluster configuration: [netmask1] In the single node configuration: [netmask]	Displays the net mask set for node [X] (a local node in the single configuration). When the net mask cannot be displayed, the following status is displayed according to the status. Invalid (None): Displayed when the value cannot be acquired.	*2, *5
3	[IPv6]	Displays the IPv6 setting title of node [X] (a local node in the single configuration).	*2, *4, *6
	In the cluster configuration: [v6fixedIP1] In the single node configuration: [v6IPaddress]	Displays the fixed IPv6 address set for node [X] (a local node in the single configuration). When the fixed IPv6 address cannot be displayed, the following status is displayed according to the status. Invalid (None): Displayed when the value is not acquired.	
	[v6serviceIP]	Displays the virtual IP address set for node [X]. When the virtual IP address cannot be displayed, the following status is displayed according to the status. - : Displayed when the virtual IP address is not set. Unknown : Displayed when the information is not acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	
	In the cluster configuration: [prefixlen1] In the single node configuration: [prefixlen]	Displays the prefix length set for node [X] (a local node in the single configuration). When the prefix length cannot be displayed, the following status is displayed according to the status. Invalid (None): Displayed when the value cannot be acquired.	

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Table 2.4.2-1 Content of Output Format (2/3)

No.	Item	Description	Remarks
4	node [Y] (<*Host name*>)	Displays the unit name of the other side node and the corresponding host name. Example: node 1(DGBQLNBX)	*3
	[IPv4]	Displays the IPv4 setting title of node [Y].	*3, *4, *5
	[fixedIP2]	Displays the fixed IP address set for node [Y]. When the fixed IP address cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid(None) : Displayed when the value cannot be acquired Invalid([invalid value]) : Displayed when the value is invalid	*2, *3, *5
	[serviceIP2]	Displays the virtual IP address set for node [Y]. When the virtual IP address cannot be displayed, the following status is displayed according to the status. - : Displayed when the virtual IP address is not set. Unknown : Displayed when the information cannot be acquired. Invalid([invalid value]) : Displayed when the value is invalid	*2, *3, *5
	[netmask2]	Displays the net mask set for node [Y]. When the net mask cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid (None) : Displayed when the value cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	*2, *3, *5
5	[IPv6]	Displays the IPv6 setting title of node [Y].	*2, *3, *4, *6
	[v6fixedIP2]	Displays the fixed IPv6 address set for node [Y]. When the fixed IPv6 address cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	
	[v6serviceIP2]	Same as [v6serviceIP1].	
	[prefixlen2]	Displays the prefix length set for node [Y]. When the prefix length cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid (None) : Displayed when the value cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	
6	[Virtual Server Name]	Displays the Virtual Server name. (Do not display “[“and”]”.)	*2, *3, *4, *7
7	[IPv4]	Displays the IPv4 setting title of [Virtual Server Name].	*2, *3, *4, *5, *7
	[serviceIP]	Displays the IP address (management IP or virtual IP) set for [Virtual Server Name]. When the IP address cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	
	[netmask]	Displays the net mask set for [Virtual Server Name]. When the net mask cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	

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Table 2.4.2-1 Content of Output Format (3/3)

No.	Item	Description	Remarks
8	[IPv6]	Displays the IPv6 setting title of [Virtual Server Name].	*2, *3, *4, *6, *7
	[v6serviceIP]	Displays the IPv6 virtual IP address set for [Virtual Server Name]. When the IP address cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	
	[prefixlen]	Displays the prefix length set for [Virtual Server Name]. When the prefix length cannot be displayed, the following status is displayed according to the status. Unknown : Displayed when the information cannot be acquired. Invalid ([invalid value]) : Displayed when the value is invalid.	
9	[mtu]	Displays the MTU value. When the values of the execution node and the other side node are different, the following status is displayed. Invalid([MTU value of execution node], [MTU value of the other side node]) Related to the MTU value in Invalid, the following status is displayed according to the status. Unknown : Displayed when the information of this side node and the other side node cannot be acquired. Invalid (None) : Displayed when the value cannot be acquired.	*2, *7 In the single node configuration, it acquires and shows the value of local node only. When the information cannot be acquired, it is displayed as “Unknown”. When the value cannot be acquired, it is displayed as “Invalid (None)”.

*1: When “(Not used)” or “Not used” is displayed in [interface], only [interface] is displayed and other items are not displayed.
*2: When the network interface is not used (not set) or not used in the Virtual Server, it is not displayed.
*3: This is not displayed in the single node configuration.
*4: This option can be specified in case of the OS version 3.1.0-XX or later.
For details of confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).
*5: Not displayed in case the “-p v6” option is specified.
*6: Not displayed in case the “-p v4” option is specified.
*7: HDI does not support Virtual Server.

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2.4.3 Execution procedure

This subsection describes the procedure for executing the iflist command.

(1) At the time of maintenance, log in the execution node via ssh from the maintenance PC usually. For the login method, refer to Maintenance Tool "1.3 Procedures for Operating Commands" (MNTT 01-0200).

(2) Execute the iflist command.
Display examples when the iflist command with no option terminated normally are shown in Figure 2.4.3-1, Figure 2.4.3-2, Figure 2.4.3-3, and Figure 2.4.3-4, and display examples when the iflist command with the -v option specified terminated normally are shown in Figure 2.4.3-5 and Figure 2.4.3-6.
Meanwhile, display examples when the iflist command with no option terminated normally but the information of the other side node cannot be acquired are shown in Figure 2.4.3-7 and Figure 2.4.3-8, and display examples when the iflist command with the -v option specified terminated normally but the information of the other side node cannot be acquired are shown in Figure 2.4.3-9 and Figure 2.4.3-10.
For details of confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When the iflist command is terminated abnormally, the message ID is displayed.
In this case, refer to Maintenance Tool "2.4.4 Command termination messages and actions to be taken" (MNTT 02-0260) and take actions.

(a) At the time of omitting the option (when it is normal or logged in node0)

[OS version earlier than 3.1.0-XX]

```
$ sudo iflist
Interface          : eth0                    Information of eth0 network interface
node 0(D770102342)
  Fixed IP addr    : 192.168.10.20
  Service IP addr  : 192.168.10.22
  Netmask          : 255.255.255.0
node 1(D770102346)
  Fixed IP addr    : 192.168.10.21
  Service IP addr  : 192.168.10.23
  Netmask          : 255.255.255.0
MTU                : 1500

Interface          : mng0                    Information of mng0 network interface
node 0(D770102342)
  Fixed IP addr    : 192.168.0.20
  Service IP addr  : 192.168.0.30
  Netmask          : 255.255.255.0
node 1(D770102346)
  Fixed IP addr    : 192.168.0.21
  Service IP addr  : 192.168.0.31
  Netmask          : 255.255.255.0
MTU                : 1500
```

Figure 2.4.3-1 Execution Example of iflist Command (In the cluster configuration)

[OS version earlier than 3.1.0-XX]

```
$ sudo iflist
Interface          : agr0                    Information of agr0 network interface
IP address         : 192.168.10.20
Netmask            : 255.255.255.0
MTU                : 1500

Interface          : mng0                    Information of mng0 network interface
IP address         : 192.168.0.20
Netmask            : 255.255.255.0
MTU                : 1500
```

Figure 2.4.3-2 Execution Example of iflist Command (In the single node configuration)

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[OS version 3.1.0-XX or later]

```
$ sudo iflist
Interface  : eth0
node 0(D770102342)
 [IPv4]
 Fixed IP addr          : 192.168.10.20
 Service IP addr        : 192.168.10.22
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:1::1
 Service IP addr        : 2001:2c0:418:1::2
 Prefix length          : 64
node 1(D770102346)
 [IPv4]
 Fixed IP addr          : 192.168.10.21
 Service IP addr        : 192.168.10.23
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:1::3
 Service IP addr        : 2001:2c0:418:1::4
 Prefix length          : 64
```

Information of eth0 Physical node network interface

```
eigyou2
 [IPv4]
 Service IP addr        : 192.168.10.40
 Netmask : 255.255.255.0
MTU       : 1500
```

Information of eth0 Virtual Server network interface

```
Interface  : eth1
node 0(D770102342)
 [IPv4]
 Fixed IP addr          : 192.168.10.50
 Service IP addr        : 192.168.10.52
 Netmask : 255.255.255.0
node 1(D770102346)
 [IPv4]
 Fixed IP addr          : 192.168.10.51
 Service IP addr        : 192.168.10.53
 Netmask : 255.255.255.0
MTU       : 1500
```

Information of eth1 Physical node network interface

```
Interface  : mng0
node 0(D770102342)
 [IPv4]
 Fixed IP addr          : 192.168.0.20
 Service IP addr        : -
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:5::1
 Service IP addr        : -
 Prefix length          : 64
node 1(D770102346)
 [IPv4]
 Fixed IP addr          : 192.168.0.21
 Service IP addr : -
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:5::2
 Service IP addr        : -
 Prefix length          : 64
MTU       : 1500
```

Information of mng0 Physical node network interface

Figure 2.4.3-3 Execution Example of iflist Command (In the cluster configuration)

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[OS version 3.1.0-XX or later]

```
$ sudo iflist
Interface          : agr0
[IPv4]
IP address         : 192.168.10.20
Netmask            : 255.255.255.0
[IPv6]
IP address         : 2001:2c0:418:10::1
Prefix length      : 64
MTU                : 1500

Interface          : mng0
[IPv4]
IP address         : 192.168.0.20
Netmask            : 255.255.255.0
[IPv6]
IP address         : 2001:2c0:418:6::1
Prefix length      : 64
MTU                : 1500
```

Information of agr0 network interface

Information of mng0 network interface

Figure 2.4.3-4 Execution Example of iflist Command (In the single node configuration)

(b) At the time of specifying the –v option (when it is normal or logged in node0)

[OS version earlier than 3.1.0-XX]

```
$ sudo iflist –v
Interface          :  eth0
node 0(D770102342)
  Fixed IP addr    :  192.168.10.20
  Service IP addr  :  192.168.10.22
  Netmask          :  255.255.255.0
node 1(D770102346)
  Fixed IP addr    :  192.168.10.21
  Service IP addr  :  192.168.10.23
  Netmask          :  255.255.255.0
MTU                :  1500

Interface          :  eth1(Not used)

Interface          :  eth2(Not used)

Interface          :  eth3(Not used)

Interface          :  mng0
node 0(D770102342)
  Fixed IP addr    :  192.168.0.20
  Service IP addr  :  192.168.0.30
  Netmask          :  255.255.255.0
node 1(D770102346)
  Fixed IP addr    :  192.168.0.21
  Service IP addr  :  192.168.0.31
  Netmask          :  255.255.255.0
MTU                :  1500
```

Information of eth0 network interface

eth1 network interface is not used (not set)

eth2 network interface is not used (not set)

eth3 network interface is not used (not set)

Information of mng0 network interface

Figure 2.4.3-5 Execution Example of iflist Command

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[OS version 3.1.0-XX or later]

```
$ sudo iflist -v
Interface  : eth0
node 0(D770102342)
 [IPv4]
 Fixed IP addr          : 192.168.10.20
 Service IP addr        : 192.168.10.22
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:1::1
 Service IP addr        : 2001:2c0:418:1::2
 Prefix length          : 64
node 1(D770102346)
 [IPv4]
 Fixed IP addr          : 192.168.10.21
 Service IP addr        : 192.168.10.23
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:1::3
 Service IP addr        : 2001:2c0:418:1::4
 Prefix length          : 64
```

Information of eth0 Physical node network interface

```
eigyou2
 [IPv4]
 Service IP addr : 192.168.10.40
 Netmask : 255.255.255.0
MTU       : 1500
```

Information of eth0 Virtual Server network interface

```
Interface  : eth1(Not used)
```

eth1 network interface is not used (not set)

```
Interface  : eth2(Not used)
```

eth2 network interface is not used (not set)

```
Interface  : eth3(Not used)
```

eth3 network interface is not used (not set)

```
Interface  : mng0
node 0(D770102342)
 [IPv4]
 Fixed IP addr          : 192.168.0.20
 Service IP addr        : -
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:5::1
 Service IP addr        : -
 Prefix length          : 64
node 1(D770102346)
 [IPv4]
 Fixed IP addr          : 192.168.0.21
 Service IP addr        : -
 Netmask : 255.255.255.0
 [IPv6]
 Fixed IP addr          : 2001:2c0:418:5::2
 Service IP addr        : -
 Prefix length          : 64
```

Information of mng0 Physical node network interface

```
eigyou1
 [IPv4]
 Service IP addr        : 192.168.10.40
 Netmask : 255.255.255.0
 [IPv6]
 Service IP addr        : 2001:2c0:418:5::4
 Prefix length          : 64
MTU       : 1500
```

Information of mng0 Virtual Server network interface

Figure 2.4.3-6 Execution Example of iflist Command

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(c) At the time of omitting the option (when the value of the fixed IP address, virtual IP address, net mask, and MTU of the other side node cannot be acquired, when logged in node 0 and the Virtual Server IP address is invalid (*))
*: The Virtual Server can be operated if the OS version is 3.1.0-XX or later.

[OS version earlier than 3.1.0-XX]

```
$ sudo iflist
Interface              :  eth0
node 0(D770102342)
  Fixed IP addr        :  192.168.10.20
  Service IP addr      :  192.168.10.22
  Netmask              :  255.255.255.0
node 1(D770102346)
  Fixed IP addr        :  192.168.10.21
  Service IP addr      :  192.168.10.23
  Netmask              :  255.255.255.0
MTU                    :  1500

Interface              :  mng0
node 0(D770102342)
  Fixed IP addr        :  192.168.0.20
  Service IP addr      :  192.168.0.30
  Netmask              :  255.255.255.0
node 1(D770102346)
  Fixed IP addr        :  Invalid(None)
  Service IP addr      :  Invalid(None)
  Netmask              :  Invalid(None)
MTU                    :  Invalid(1500,None)
```

The value of the fixed IP address, virtual IP address, net mask, and MTU of the other side node of the mng0 cannot be acquired

Figure 2.4.3-7 Execution Example of iflist command

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[OS version 3.1.0-XX or later]

```
$ sudo iflist
Interface                : eth0
node 0(D770102342)
[IPv4]
 Fixed IP addr           : 192.168.10.20
 Service IP addr         : 192.168.10.22
 Netmask                 : 255.255.255.0
node 1(D770102346)
[IPv4]
 Fixed IP addr           : 192.168.10.21
 Service IP addr         : 192.168.10.23
 Netmask                 : 255.255.255.0
eigyou2
 [IPv4]
 Service IP addr : Invalid(192.168.10.40)
 Netmask                 : Invalid(255.255.0.0)
MTU                      : Invalid(1500,None)
```

The value of the eth0 Virtual Server IP address is invalid

```
Interface       : mng0
node 0(D770102342)
 [IPv4]
 Fixed IP addr           : 192.168.0.20
 Service IP addr         : 192.168.0.30
 Netmask                 : 255.255.255.0
node 1(D770102346)
 [IPv4]
 Fixed IP addr           : Invalid(None)
 Service IP addr         : -
 Netmask                 : Invalid(None)
MTU                      : Invalid(1500,None)
```

The value of the fixed IP address, virtual IP address, net mask, and MTU of the other side node of the mng0 cannot be acquired

Figure 2.4.3-8 Execution Example of iflist command

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(d) At the time of specifying the -v option (when the information of the other side node cannot be acquired and the information of the Virtual Server cannot be acquired, when logged in node 0)
*: The Virtual Server can be operated if the OS version is 3.1.0-XX or later.

```
$ sudo iflist
Interface              :  eth0
node 0(D770102342)
  Fixed IP addr        :  192.168.10.20
  Service IP addr      :  192.168.10.22
  Netmask              :  255.255.255.0
node 1(D770102346)
  Fixed IP addr        :  Unknown
  Service IP addr      :  Unknown
  Netmask              :  Unknown
MTU                    :  Invalid(1500,None)

Interface              :  eth1(Not used)

Interface              :  eth2(Not used)

Interface              :  eth3(Not used)

Interface              :  mng0
node 0(D770102342)
  Fixed IP addr        :  192.168.0.20
  Service IP addr      :  192.168.0.30
  Netmask              :  255.255.255.0
node 1(D770102346)
  Fixed IP addr        :  Unknown
  Service IP addr      :  Unknown
  Netmask              :  Unknown
MTU                    :  Invalid(1500, Unknown)
```

Information of the other side node of eth0 cannot be acquired

Information of the other side node of mng0 cannot be acquired

Figure 2.4.3-9 Execution Example of iflist command

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```
$ sudo iflist –v
Interface              : eth0
node 0(D770102342)
 [IPv4]
 Fixed IP addr         : 192.168.10.20
 Service IP addr       : 192.168.10.22
 Netmask               : 255.255.255.0
node 1(D770102346)
 [IPv4]
 Fixed IP addr         : Unknown
 Service IP addr       : Unknown
 Netmask               : Unknown
eigyou2
 [IPv4]
 Service IP addr       : Unknown
 Netmask               : Unknown
MTU                    : Invalid(1500,Unknown)

Interface              : eth1(Not used)

Interface              : eth2(Not used)

Interface              : eth3(Not used)

Interface              : mng0
node 0(D770102342)
 [IPv4]
 Fixed IP addr         : 192.168.0.20
 Service IP addr       : -
 Netmask               : 255.255.255.0
node 1(D770102346)
 [IPv4]
 Fixed IP addr         : Unknown
 Service IP addr       : -
 Netmask               : Unknown
MTU                    : Invalid(1500,Unknown)
```

Information of the other side node of eth0 cannot be acquired

The information of the Virtual Server eigyou2 cannot be acquired.

Information of the other side node of mng0 cannot be acquired

Figure 2.4.3-10 Execution Example of iflist command

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2.4.4 Command termination messages and actions to be taken

A message may be displayed when the iflist command is executed. Actions to be taken against messages are described in Table 2.4.4-1 “Message IDs and Actions to be Taken”.

Table 2.4.4-1 Message ID and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	A problem may have occurred in the internal processing.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
2	KAQM05032-E	The entry for the VLAN ID is invalid.	The value of the input VLAN ID is incorrect.	Specify the VLAN ID using the numbers from 1 to 4094.
3	KAQM05038-E	The specified interface does not exist. (interface = <*interface*>)	The specified interface is not created.	Specify an enabled interface.
4	KAQM05042-E	The interface specification is invalid.	The specified value is incorrect.	Check the specified data, and specify the enabled data.
5	KAQM05044-E	An attempt to recover the network settings has failed.	The attempt to roll back the network setting failed.	Check whether the node in the cluster is not stopped and no failure has occurred in the network. If there is no problem, collect the OS Log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
6	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	An unexpected error has occurred in file read.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
7	KAQM05114-E	The interface of the heartbeat port or an internally-used port cannot be specified. (interface = <*interface*>)	The interface of the heartbeat port or an internally-used port cannot be specified.	Specify the interface of the data port or the management port.
8	KAQM05206-E	The specified IP address of this protocol version is not set.	The IP address of the specified protocol version is not set.	Check the specified data and specify valid data.

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Table 2.4.4-1 Message ID and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
9	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource to be used in the required processing is used by another user.	Execute the command again after waiting for a while. If the error occurs again, collect the OS Log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
11	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	An error exists in the parameter.	Specify a correct parameter, and execute the command again.
12	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
13	KAQM14134-E	An error occurred in the shared processing of commands. (Error = *<error>*)	An error has occurred in the processing common to the command.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM14136-I	Usage: command-syntax	Displaying the command format.	It is not required to take actions. Displayed when the –h option is specified. Furthermore, displayed continuously when KAQM14131-E is displayed.
15	KAQM14138-E	There are too many or too few parameters.	The parameter has excess and deficiency.	After checking the command format, specify a correct parameter, and execute the command again.
16	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.5 Displaying the FC Status (fpstatus)

The fpstatus command displays the status and configuration of the FC path set to the node.

NOTE:
- The fpstatus command does not check the already-defined cluster configuration and cluster management LU failures. Therefore, the fpstatus command can be executed even before the cluster configuration and at the time of cluster management LU failures.
- This command is not supported in the single node configuration not connected to the disk array subsystem.
- As the port number and others are different depending on the target model, replace them as what is appropriate as needed.

2.5.1 Command line

The command lines of the fpstatus command can use the following options.

- For displaying the FC path status of the execution node:
  fpstatus [-c] [-v] [<path>] | -h

- For displaying the FC path status of the both nodes:
  fpstatus --allnode

- For displaying the LU path status:
  fpstatus --lupath

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Table 2.5.1-1 shows the description of the options.

Table 2.5.1-1 Command Options

No.	Option	Description	Remarks
1	-c	Displays the status of the FC path set to the node by the colon delimit. Displays the space character between the items by replacing to a colon (“:”). Only one colon (“:”) is used regardless of the number of space characters.	Use it only when the specific instruction is provided.
2	-v	Displays the detailed information of the FC path set to the node (information when omitting the option, Model information and Serial information). Delimited by a colon (“:”) when specifying the –c option.	Use it only when the specific instruction is provided.
3	<path>	Displays only the status of the specified FC path.	Use it only when the specific instruction is provided.
4	--allnode	[Cluster configuration] Displays all the FC path information collectively. The displayed contents of the FC path information are equal to -v. The FC path information is displayed in order of the command execution node and the other node. (This option can be specified when the OS version is 3.0.0-XX or later. For the confirmation of the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).) [Single node configuration] Displays the FC path information of the execution node. When not connected to the disk array subsystem, only host names and item names in Table 2.5.2-1 will be displayed (however, when the OS version is 3.2.3-XX or earlier, an error message will be displayed.)	•Terminated with an error if this option is specified when no cluster is structured. • If the communication cannot be performed with the other node via the management LAN, only the FC path information of the node which executed the command is output. • Use it only when the specific instruction is provided.
5	--lupath	Displays the LU path information In addition, the information for identifying the LU without an alternate path is displayed by this option. (This option can be specified when the OS version is 3.0.0-XX or later. For the confirmation of the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).) [Single node configuration] Displays the LU path information of the execution node. When not connected to the disk array subsystem, only item names in Table 2.5.2-1 will be displayed (however, when the OS version is 3.2.3-XX or earlier, an error message will be displayed.)	•Terminated with an error if this option is specified when no cluster is structured. • If the communication cannot be performed with the other node via the management LAN, only the FC path information of the node which executed the command is output. • Use it only when the specific instruction is provided.
6	-h	Displays the format of the command.	—

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2.5.2 Output format

The output format at the time of fpstatus command execution is shown in Figure 2.5.2-1 to Figure 2.5.2-4 and the contents are shown in Table 2.5.2-1.

(a) When omitting the option

```
$ sudo fpstatus
Path            Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN     Status
path000-0004-0A N0-T000  fc0004    10000000c98a9f2e 0A         50060e801024e8e0 Online
path000-0006-1C N0-T000  fc0006    10000000c98db65a 1C         50060e801024e8e6 Online
      1            2        3           4              5            6              7
```

Figure 2.5.2-1 fpstatus Output Format

(b) When specifying the -v option

```
Output format of fpstatus -v
                                                                                  8       9
Path            Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN     Model   Serial   Status
path000-0004-0A N0-T000  fc0004    10000000c98a9f2e 0A         50060e801024e8e0 AMS     85010110 Online
path000-0006-1C N0-T000  fc0006    10000000c98db65a 1C         50060e801024e8e6 AMS     85010110 Offline
```

Figure 2.5.2-2 fpstatus Output Format

(c) When specifying the --allnode

```
Output format of fpstatus --allnode
node 0(DJ8RMPBX)   10
Path            Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN     Model   Serial   Status
path000-0004-0A N0-T000  fc0004    10000000c98a9f2e 0A         50060e801024e8e0 AMS     85010110 Online
path000-0006-1C N0-T000  fc0006    10000000c98db65a 1C         50060e801024e8e6 AMS     85010110 Online
path001-0004-0A N0-T001  fc0004    10000000c98f8f2e 0A         50060e80102448e0 AMS     85010201 Online
path001-0006-1C N0-T001  fc0006    10000000c98ed65a 1C         50060e80102448e6 AMS     85010201 Online

node 1(D79RMPDX)
Path            Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN     Model   Serial   Status
path000-0004-0C N1-T000  fc0004    10000000c98bb92e 0C         50060e801024e8e0 AMS     85010110 Online
path000-0006-1A N1-T000  fc0006    10000000c98ccb5a 1A         50060e801024e8e6 AMS     85010110 Online
path001-0004-0C N1-T001  fc0004    10000000c98a012e 0C         50060e80102448e0 AMS     85010201 Online
path001-0006-1A N1-T001  fc0006    10000000c98d985a 1A         50060e80102448e6 AMS     85010201 Online
```

Figure 2.5.2-3 fpstatus Output Format

(d) When specifying the --lupath

```
Output format of fpstatus --lupath
Model   Serial   LDEV(  hex)  ArrayPort  Target   HostPort  HostPortWWN      Status   Mismatch
AMS     85010110  100(  0064)  0A        N0-T000  fc0004    10000000c98a9f2e Online   -
AMS     85010110  100(  0064)  1C        N0-T000  fc0006    10000000c98db65a Online   -
AMS     85010110  100(  0064)  0C        N1-T000  fc0004    10000000c98bb92e Online   -
AMS     85010110  100(  0064)  1A        N1-T000  fc0006    10000000c98ccb5a Online   -
AMS     85010201   22(  0016)  0A        N0-T001  fc0004    10000000c98f8f2e Online   -
AMS     85010201   22(  0016)  1C        N0-T001  fc0006    10000000c98ed65a Online   -
AMS     85010201   22(  0016)  0C        N1-T001  fc0004    10000000c98a012e Online   -
AMS     85010201   22(  0016)  1A        N1-T001  fc0006    10000000c98d985a Online   -
                     11                                                      12       13
```

Figure 2.5.2-4 fpstatus Output Format

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Table 2.5.2-1 Contents of Output Format (1/2)

No.	Item	Description	Remarks
1	Path	Displays the path in the following format (15 bytes). pathXXX-YYYY-ZZ XXX : Fixed GID (3 bytes) YYYY : Host port number (4 bytes) ZZ : Array port number (2 bytes)	Example: path000-0004-0A *1: The fixed GID is a serial number of decimal number allocated to the path of the target grouped by the FC path management, and takes the value 000 to 999. If the fixed GID exceeds the upper limit (999) of the fixed GID map, allocate the smallest number among the fixed GID having the currently unused (disconnected) target path only. If the fixed GID cannot be acquired, "-"(hyphen) is displayed. *2: If a numerical value is insufficient to a digit number, complement 0 in front. *3: If the array port number exceeds 3 bytes, it is displayed as is.
2	Target	Displays the target in the following format (7 bytes). XX-TYYY XX : node ID (2 bytes) YYY : Fixed GID (3 bytes)	Example: N0-T0000 *1: If the fixed GID cannot be acquired, "-"(hyphen) is displayed. *2: If a numerical value is insufficient to a digit number, complement 0 in front. *3: The node ID is fixed as [NO] in the single node configuration.
3	HostPort	Displays the host port name in the following format (6 bytes). fcXXXX XXXX : Host port number	Example: fc0004
4	HostPortWWN	Displays WWPN (World Wide Port Name) in hexadecimal with 16 digits (16 bytes). 1000XXXXXXXXXXXX	Example: 10000000c98a9f2e *: If WWPN cannot be acquired due to a path failure of the FC path, displays as shown below. "----------"
5	ArrayPort	Displays the specific array port name of the side of disk array subsystem.	Example: 0A
6	ArrayPortWWN	Displays WWPN (World Wide Port Name) of the array port in hexadecimal with 16 digits (16 bytes). 50060E8XXXXXXXXX	Example: 50060e801024e8e0 *: If it is first time installation and the FC path is not normal, the following message is displayed because the array port WWN cannot be acquired. "----------" The FC link down (failures of HBA on the host side, firmware, FC-SW and FC cables, and others) and the FC failures (failures of the port on the RAID side, FC cables and FC-SW, and others) are considered as path failures.

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Table 2.5.2-1 Contents of Output Format (2/2)

No.	Item	Description	Remarks
7	Status	Displays the FC path status by the character string (5 to 27 bytes). Online : Operating status Offline : Planned shutdown status (blocked status by the command operation) Error : Failure termination status (blocked status by the path error, etc.) Partially Online : Operating status (however, the status not accessed to a part of the LUs) Configuration Mismatch : Setting error status (differs from the FC path allocation switching the LU allocation to the host group corresponding to the switching FC path) Unknown : Undetermined status (FC path status cannot be acquired)	*: If an LU failure is detected by Online, Offline or Partially Online, it is displayed by adding “(LU Error)”. Example: Partially Online (LU Error)
8	Model	Displays the model identifier of the disk array subsystem. AMS : DF800S, DF800M, DF800H, DF800ES, DF800EM, or DF800EH AMS or the specified model name : DF800EXS HUS : DF850XS, DF850S, or DF850MH USP_V : RAID600 FC USP_VM : RAID600 RK VSP : RAID700 VSP_G1000 : RAID800 HUS_VM : HM700 VSP_Gx00 : HM800(any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850(any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900)	*: If the information of the chassis cannot be acquired, “-” (hyphen) is displayed.
9	Serial	Displays the serial number of the storage subsystem.	Example: 85010110 *: If the information of the chassis cannot be acquired, “-”(hyphen) is displayed.
10	[node(Host name)]	Displays the node number and the host name of the login node. Only the host name is displayed in the single node configuration.	Displayed only when --allnode is specified.
11	LDEV(hex)	Displays internal LU number as a decimal. A hex notation is displayed in the parenthesis.	—
12	Status	Displays the path status. Online: Operational status Online(C): Blocked status by the offline operation by the command Offline(E): Blocked status by failure Online(E): Status where failure occurred (If no operating path (Online) exists among the paths accessing one LU, one of the paths becomes Online(E).)	—
13	Mismatch	Displays the setting status of the alternate path. “-” is displayed if an alternate path exists. “*” is displayed if no alternate path exists.	—

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Table 2.5.2-2 shows the list of the contents displayed by the respective options specifications.

Table 2.5.2-2 List of Displayed Contents of FC Path

#	Item	-c without option	-v	Path specified	--allnode	--lupath
1	Path	Y	Y	Y	Y	N
2	Target	Y	Y	Y	Y	Y
3	HostPort	Y	Y	Y	Y	Y
4	HostPortWWN	Y	Y	Y	Y	Y
5	ArrayPort	Y	Y	Y	Y	Y
6	ArrayPortWWN	Y	Y	Y	Y	N
7	Status	Y	Y	Y	Y	N
8	Model	N	Y	N	Y	Y
9	Serial	N	Y	N	Y	Y
10	[node(Host name)]	N	N	N	Y	N
11	LDEV(hex)	N	N	N	N	Y
12	Status	N	N	N	N	Y
13	Mismatch	N	N	N	N	Y

Y: displayed, N: Not displayed

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2.5.3 Execution procedure

This subsection describes the procedure for executing the fpstatus command.

(1) At the time of maintenance, log in to the execution mode via ssh from the maintenance PC usually. For the login method, refer to Maintenance Tool "1.3 Procedures for Operating Commands" (MNTT 01-0200).

(2) Execute the fpstatus command for each node. The display example at the time of fpstatus execution is shown in Figure 2.5.3-1 to Figure 2.5.3-11.
If the fpstatus command terminated abnormally, the FC status is not displayed, and the message ID is displayed. In this case, refer to Maintenance Tool "2.5.4 Command termination messages and action to be taken" (MNTT 02-0340) and correspond to it.

(a) When omitting the option (when executing on the node0 side)

```
$ sudo fpstatus
Path              Target     HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A N0-T000      fc0004    10000000c98a9f2e  0A         50060e801024e8e0  Online
path000-0006-1C N0-T000      fc0006    10000000c98db65a  1C         50060e801024e8e6  Online
```

Figure 2.5.3-1 Execution example of fpstatus command

(b) When omitting the option (when the warning error has occurred)

```
$ sudo fpstatus
Path              Target     HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A N0-T000      fc0004    10000000c98a9f2e  0A         50060e801024e8e0  Online
path000-0006-1C N0-T000      fc0006    10000000c98db65a  1C         50060e801024e8e6  Error

KAQM32019-W An FC path is not in a normal state.
```

Figure 2.5.3-2 Execution example of fpstatus command

(c) When specifying the FC path

```
$ sudo fpstatus path000-0004-0A
Path              Target     HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A N0-T000      fc0004    10000000c98a9f2e  0A         50060e801024e8e0  Online
```

Figure 2.5.3-3 Execution example of fpstatus command

* If an incorrect FC path is specified, KAQM32011-E is displayed.

(d) When specifying the –v option

```
$ sudo fpstatus -v                                                          Model and Serial are displayed
Path              Target     HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Model   Serial   Status
path000-0004-0A N0-T000      fc0004    10000000c98a9f2e  0A         50060e801024e8e0  AMS     85010110 Online
path000-0006-1C N0-T000      fc0006    10000000c98db65a  1C         50060e801024e8e6  AMS     85010110 Online
```

Figure 2.5.3-4 Execution example of fpstatus command

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(e) When specifying the –c option only (when executing on the node0 side)

```
$ sudo fpstatus -c
Path            Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A N0-T000   fc0004    10000000c98a9f2e  0A         50060e801024e8e0  Online
path000-0006-1C N0-T000   fc0006    10000000c98db65a  1C         50060e801024e8e6  Online
```

Figure 2.5.3-5 Execution example of fpstatus command

(f) When specifying the –c option only (when the warning error has occurred)

```
$ sudo fpstatus -c
Path            Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A N0-T000   fc0004    10000000c98a9f2e  0A         50060e801024e8e0  Online
path000-0006-1C N0-T000   fc0006    10000000c98db65a  1C         50060e801024e8e6  Error

KAQM32019-W An FC path is not in a normal state.
```

Figure 2.5.3-6 Execution example of fpstatus command

(g) When specifying the --allnode (if executed on the node 0 in the cluster configuration)

```
Output format of fpstatus --allnode
node 0(DJ8RMPBX)
Path            Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Model  Serial     Status
path000-0004-0A N0-T000   fc0004    10000000c98a9f2e  0A         50060e801024e8e0  AMS    85010110   Online
path000-0006-1C N0-T000   fc0006    10000000c98db65a  1C         50060e801024e8e6  AMS    85010110   Online
path001-0004-0A N0-T001   fc0004    10000000c98f8f2e  0A         50060e80102448e0  AMS    85010201   Online
path001-0006-1C N0-T001   fc0006    10000000c98ed65a  1C         50060e80102448e6  AMS    85010201   Online

node 1(D79RMPDX)
Path            Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Model  Serial     Status
path000-0004-0C N1-T000   fc0004    10000000c98bb92e  0C         50060e801024e8e0  AMS    85010110   Online
path000-0006-1A N1-T000   fc0006    10000000c98ccb5a  1A         50060e801024e8e6  AMS    85010110   Online
path001-0004-0A N1-T001   fc0004    10000000c98a012e  0A         50060e80102448e0  AMS    85010201   Online
path001-0006-1C N1-T001   fc0006    10000000c98d985a  1C         50060e80102448e6  AMS    85010201   Online
```

Figure 2.5.3-7 Execution example of fpstatus command

(h) When specifying the --allnode (if communication with the other node is not possible in the cluster configuration)

```
Output format of fpstatus --allnode
node 0(DJ8RMPBX)
Path            Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Model  Serial     Status
path000-0004-0A N0-T000   fc0004    10000000c98a9f2e  0A         50060e801024e8e0  AMS    85010110   Online
path000-0006-1C N0-T000   fc0006    10000000c98db65a  1C         50060e801024e8e6  AMS    85010110   Online
path001-0004-0A N0-T001   fc0004    10000000c98f8f2e  0A         50060e80102448e0  AMS    85010201   Online
path001-0006-1C N0-T001   fc0006    10000000c98ed65a  1C         50060e80102448e6  AMS    85010201   Online

KAQM32051-W FC path information could only be acquired for the node on which the operation was performed, because
communication between the nodes is down.
```

Figure 2.5.3-8 Execution example of fpstatus command

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If the [Configuration Mismatch] is displayed as the [Status] as shown in Figure 2.5.3-9, the wrong setting in mapping might be the reason. In this case, by specifying the option and performing it, what LU in what port is not mapped can be confirmed.
The display is as shown in Figure 2.5.3-10 if all the alternate paths are normally mapped, while the display is as shown in Figure 2.5.3-11 if there is an LU without an alternate path.

(i) When specifying the --allnode (if there is an LU without an alternate path)

```
$ sudo fpstatus --allnode
node 0(DJ8RMPBX)
Path              Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN      Model Serial Status
path000-0004-0A   N0-T000  fc0004    10000000c98a9f2e 0A         50060e801024e8e0  AMS   85010110 Configuration Mismatch
path000-0006-1C   N0-T000  fc0006    10000000c98db65a 1C         50060e801024e8e6  AMS   85010110 Configuration Mismatch
path001-0004-0A   N0-T001  fc0004    10000000c98f8f2e 0A         50060e80102448e0  AMS   85010201 Online
path001-0006-1C   N0-T001  fc0006    10000000c98ed65a 1C         50060e80102448e6  AMS   85010201 Online

node 1(D79RMPDX)
Path              Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN      Model Serial Status
path000-0004-0C   N1-T000  fc0004    10000000c98bb92e 0C         50060e801064d9e0  AMS   85010110 Online
path000-0006-1A   N1-T000  fc0006    10000000c98ccb5a 1A         50060e801064d9e6  AMS   85010110 Online
path001-0004-0C   N1-T001  fc0004    10000000c98a012e 0C         50060e80106449d0  AMS   85010001 Configuration Mismatch
path001-0006-1A   N1-T001  fc0006    10000000c98d985a 1A         50060e80106449d6  AMS   85010001 Configuration
```

Figure 2.5.3-9 Execution example of fpstatus command

(j) When specifying the --lupath

```
Output format of fpstatus --lupath
Model    Serial   LDEV(  hex)  ArrayPort  Target    HostPort  HostPortWWN       Status   Mismatch
AMS      85010110   100(  0064)  0A        N0-T000   fc0004    10000000c98a9f2e  Online   -
AMS      85010110   100(  0064)  1C        N0-T000   fc0006    10000000c98db65a  Online   -
AMS      85010110   100(  0064)  0C        N1-T000   fc0004    10000000c98bb92e  Online   -
AMS      85010110   100(  0064)  1A        N1-T000   fc0006    10000000c98ccb5a  Online   -
AMS      85010110   101(  0065)  0A        N0-T000   fc0004    10000000c98a9f2e  Online   -
AMS      85010110   101(  0065)  1C        N0-T000   fc0006    10000000c98db65a  Online   -
AMS      85010110   101(  0065)  0C        N1-T000   fc0004    10000000c98bb92e  Online   -
AMS      85010110   101(  0065)  1A        N1-T000   fc0006    10000000c98ccb5a  Online   -
AMS      85010201    22(  0016)  0A        N0-T001   fc0004    10000000c98f8f2e  Online   -
AMS      85010201    22(  0016)  1C        N0-T001   fc0006    10000000c98ed65a  Online   -
AMS      85010201    22(  0016)  0C        N1-T001   fc0004    10000000c98a012e  Online   -
AMS      85010201    22(  0016)  1A        N1-T001   fc0006    10000000c98d985a  Online   -
AMS      85010201    23(  0017)  0A        N0-T001   fc0004    10000000c98f8f2e  Online   -
AMS      85010201    23(  0017)  1C        N0-T001   fc0006    10000000c98ed65a  Online   -
AMS      85010201    23(  0017)  0C        N1-T001   fc0004    10000000c98a012e  Online   -
AMS      85010201    23(  0017)  1A        N1-T001   fc0006    10000000c98d985a  Online   -
```

Figure 2.5.3-10 Execution example of fpstatus command

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(k) When specifying the --lupath (if LU without alternate path exists)

Output format of fpstatus --lupath

Model	Serial	LDEV(hex)	ArrayPort	Target	HostPort	HostPortWWN	Status	Mismatch	
AMS	85010110	100(0064)	0A	N0-T000	fc0004	10000000c98a9f2e	Online	*	3
AMS	85010110	100(0064)	0C	N1-T000	fc0004	10000000c98bb92e	Online	-	
AMS	85010110	100(0064)	1A	N1-T000	fc0006	10000000c98ccb5a	Online	-	
AMS	85010110	101(0065)	0A	N0-T000	fc0004	10000000c98a9f2e	Online	-	4
AMS	85010110	101(0065)	1C	N0-T000	fc0006	10000000c98db65a	Online	-	
AMS	85010110	101(0065)	0C	N1-T000	fc0004	10000000c98bb92e	Online	-	
AMS	85010110	101(0065)	1A	N1-T000	fc0006	10000000c98ccb5a	Online	-	
AMS	85010201	22(0016)	0A	N0-T001	fc0004	10000000c98f8f2e	Online	-	
AMS	85010201	22(0016)	1C	N0-T001	fc0006	10000000c98ed65a	Online	-	
AMS	85010201	22(0016)	1A	N1-T001	fc0006	10000000c98d985a	Online	*	5
AMS	85010201	23(0017)	0A	N0-T001	fc0004	10000000c98f8f2e	Online	-	
AMS	85010201	23(0017)	1C	N0-T001	fc0006	10000000c98ed65a	Online	-	
AMS	85010201	23(0017)	0C	N1-T001	fc0004	10000000c98a012e	Online	-	6
AMS	85010201	23(0017)	1A	N1-T001	fc0006	10000000c98d985a	Online	-	

Figure 2.5.3-11 Execution example of fpstatus command

As for ③ and ⑤ in Figure 2.5.3-11, "*" is displayed in the column of [Mismatch], which indicates that there is an LU without an alternate path. In this case, identify the Array Port to be the route of the alternate path of ③ and ⑤ and request the system administrator to review the LU map.
The Array Port to be the route of the alternate path can be identified by any of the following methods.

(k-1) In identifying the Array Port of the alternate path for ③, by paying attention to [ArrayPort] of ③ and comparing it with the [ArrayPort] of ① whose [Status] is [Configuration Mismatch] in the execution example of Figure 2.5.3-9, it can be identified that the ArrayPort[1C] paired with [0A] is the alternate path of ③.
As for ⑤, similarly, by comparison with ② of Figure 2.5.3-9 by the same method, it can be identified that the ArrayPort[0C] is the alternate path of ⑤.

(k-2) If multiple LUs are mapped as shown in Figure 2.5.3-11, as in ④, by paying attention to [ArrayPort] of the same [Target] as ③ and comparing the Array Port of displaying the path including ③ with the Array Port of displaying the path of ④, it can be identified that the [1C] is the route for the alternate path of ③.
As for ⑤, similarly, by comparison with ⑥, it can be identified that the ArrayPort[0C] is the alternate path of ⑤.

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(*l*) Confirming proper LU
Specify -v option and –lupath option to confirm proper LU.

(*l*-1) Execute the command with specifying -v option and check the following items.

- [Online] is displayed as [Status]
- [Model] is correspond with the connected disk array subsystem
- [Serial] is correspond with the connected disk array subsystem

```
$ sudo fpstatus -v
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN       Model  Serial    Status
path000-0004-0A   N0-T000   fc0004    10000000c98a9f2e  0A         50060e801024e8e0   AMS    85010110  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65a  1C         50060e801024e8e6   AMS    85010110  Online
```

Figure 2.5.3-12 Execution example of fpstatus command

(*l*-2) Execute the command with specifying --lupath option and check the following items.

- [Online] is displayed as [Status]
- At the time of initial installation: check if [LDEV] number is not different from customer configuration information.
- At the time of maintenance: only one LU is displayed

```
$ sudo fpstatus -v
Model     Serial    LDEV(  hex)  ArrayPort  Target    HostPort  HostPortWWN       Status   Mismatch
AMS       85010110  1011(  03F3)  0A         N0-T000   fc0004    10000000c98a9f2e  Online   -
AMS       85010110  1011(  03F3)  1C         N0-T000   fc0005    10000000c98db65a  Online   -
```

Figure 2.5.3-13 Execution example of fpstatus command

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2.5.4 Command termination messages and action to be taken

A message may be displayed when the fpstatus command is executed. Actions to be taken against messages are described in Table 2.5.4-1 “Message IDs and Actions to be Taken”.

Table 2.5.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource used in the required processing is also used by the other users.	Execute it again after waiting for a while. If the error occurs again, collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300) for how to execute it.
2	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	The parameter has an error.	Specify the correct parameter, and execute it again.
3	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message “Management IP address is not set” is not output.
4	KAQM14134-E	An error occurred in the shared processing of commands. (Error = *<error>*)	An error occurred in the common processing of the command.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
5	KAQM14136-I	Usage: command-syntax	Format display of the command	Unnecessary to correspond. Displayed when the –h option is specified. Furthermore, continuously displayed also when KAQM14131-E is displayed.
6	KAQM14138-E	There are too many or too few parameters.	The parameter has excess and deficiency.	After confirming the command format, specify the correct parameter, and execute it again.
7	KAQM14178-E	This operation cannot be performed on the configuration.	This command cannot be performed in the current configuration.	—
8	KAQM32011-E	The specified FC path does not exist.	The specified FC path does not exist.	Check the specified FC path, and execute it again.
9	KAQM32015-E	An attempt to acquire information about the FC path has failed.	The FC path information was unable to be acquired.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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Table 2.5.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
10	KAQM32019-W	An FC path is not in a normal state.	The FC path is not normal.	Check the connection status of the FC cable. If there is no FC cable, check the LU status also. After changing the FC path to normal, switch the FC path status to “Online” by the fponline command.
11	KAQM32020-W	An LU error might have occurred.	An LU failure may have occurred.	After removing the LU failure, switch the FC path to “Online” by the fponline command.
12	KAQM32021-W	At least one FC path has the Partially Online status.	The FC path status is “Partially Online”.	Switch the FC path to “Online” by the fponline command.
13	KAQM32022-W	The assignment of LUs to corresponding host groups differ between each switch-destination FC path.	The LU allocation to the corresponding host group differs between the switching FC paths.	Check whether the same LU is allocated to each host group to which the switching FC path corresponds.
14	KAQM32023-W	An attempt to acquire the status of the FC path has failed.	The FC path status cannot be acquired.	Check whether the HBA card is inserted or not. If it is inserted, check whether WWN of the FC port on the storage subsystem side is correct or not. If it is correct, confirm the connection status of the FC cables, FC switch setting and the storage subsystem setting. If there is no problem on these, check whether the LU is allocated to the host group corresponding to the target FC path or not.
15	KAQM32039-E	A system error occurred.	A system error occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
16	KAQM32051-W	FC path information could only be acquired for the node on which the operation was performed, because communication between the nodes is down.	Because communication between nodes failed, the other node in the cluster might be down, or a network error might have occurred.	Confirm whether the LAN cable is connected and whether the other node in the cluster is running. After the connection to the other node in the cluster is restored, confirm the license consistency of the both nodes. For confirmation of the node status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040). For confirmation of the licenses, refer to Maintenance Tool “2.31 Displaying Licenses (licenselist)” (MNTT 02-1880). If the error occurs again, collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300) for how to execute it.

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2.6 Displaying SIMs on This Side (syseventlist)

The syseventlist command acquires and displays the local SIM log file (/var/log/sim_self) and, at the same time, stores the execution result in the "/home/service/syseventlist.log" file.

NOTE: When the file of the same name exists, overwrite and store it.

2.6.1 Command line

For the command lines of the syseventlist command, the following options can be used.

syseventlist [-h]

Table 2.6.1-1 shows the description of the options.

Table 2.6.1-1 Command Options

No.	Option	Description	Remarks
1	Omitted	The local SIM log file (/var/log/sim_self) is displayed. Furthermore, the execution result is stored in the "/home/service/syseventlist.log" file.	At the time of maintenance, omit the options usually.
2	-h	Displays the command format.	KAQM14136-I is displayed at the time of execution.

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2.6.2 Output Format

The output format at the time of syseventlist command execution depends on the OS version. If the OS version is 3.2.0-XX or earlier, each SIM is displayed in two lines as shown in Figure 2.6.2-1, and if the OS version is 3.2.1-XX or later, each SIM is displayed in one line as shown in Figure 2.6.2-2.

```
syseventlist output format

[Acquisition time]                                                  1   Oldest generation SIM
[SIM code] [SIM message sentence]                                   3
[Acquisition time]                                                      Second oldest generation SIM
[SIM code] [SIM message sentence]
[Acquisition time (virtual server time=Time of occurrence in Virtual Server)]  4   SIM from Virtual Server
[SIMcode] [SIM message sentence](virtual server ID=[Virtual Server ID])        5
                 .                                  .
                 .                                  .
                 .                  (Repeat for the number of generations)
                 .                                  .
                 .                                  .
[Acquisition time]
[SIM code] [SIM message sentence]                       Newest generation SIM

  *:  The contents of the local SIM log files for all the negations are displayed in order of the registration
      (from the oldest).
```

Figure 2.6.2-1 syseventlist Output Format (3.2.0-XX or earlier)

```
syseventlist output format

 1                  2              3
[Acquisition time]  [Host name] [SIM code] [SIM message sentence]          Oldest generation SIM
[Acquisition time]  [Host name] [SIM code] [SIM message sentence]          Second oldest generation SIM
[Acquisition time (virtual server time=Time of occurrence in Virtual Server)] [Host name] [SIM code] [SIM message
sentence] (virtual server ID=[Virtual Server ID])  5                 4     SIM from Virtual Server
                 .                                  .
                 .                                  .
                 .                  (Repeat for the number of generations)
                 .                                  .
                 .                                  .
[Acquisition time]  [Host name] [SIM code] [SIM message sentence]          Newest generation SIM

  *:  The contents of the local SIM log files for all the negations are displayed in order of the registration
      (from the oldest).
```

Figure 2.6.2-2 syseventlist Output Format (3.2.1-XX or later)

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Table 2.6.2-1 Content of Output Format

No.	Item	Description	Remarks
1	[Acquisition time]	Displays the acquisition time by a character string of 28 characters of "date command standard display format". The output format depends on the OS version. For the OS version confirmation, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060). [Output format of the OS version 3.2.0-XX or earlier] Example: Thu May 7 12:02:26 JST 2009 From the left, indicates a day of the week, a month, a day, time:minute:second, a time zone, and a western calendar. [Output format of the OS version 3.2.1-XX or later] Example: May 7 12:02:26 From the left, indicates a month, a day, and time:minute:second.	Displays days of the week and months by abbreviated names. Displays time by 24-hour indication.
2	[Host name]	Displays the host name.	
3	[SIM code]	Displays the SIM code of the local SIM. Example: KAQG72012-W For details of the SIM code, refer to "C.3 Messages".	
	[SIM message sentence]	Displays the SIM message sentence of the local SIM. Example: Communication via the main heartbeat cable was interrupted. For details of the SIM message sentence, refer to "C.3 Messages".	
4	[Acquisition time (virtual server time=Time of occurrence in Virtual Server)]	Displays as the time of acquisition in the Physical node (time of occurrence in Virtual Server). The time zone of the displayed time is the time zone set in the Physical node. The contents of time are equal to item 1.	Outputs when the command is issued from the Virtual Server in the OS version 3.1.0-XX or later. For details of confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060). HDI does not support Virtual Server.
5	[SIM code]	Displays the SIM code issued in Virtual Server. For the details of the SIM code, refer to "C.3 Messages".	
	[SIM message sentence]	Displays the SIM message sentence issued in Virtual Server. For the details of the SIM message sentence, refer to "C.3 Messages".	
	[Virtual Server ID]	Displays the Virtual Server ID of the target Virtual Server for which SIM was issued.	

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2.6.3 Execution procedure

This subsection describes the procedure for executing the syseventlist command.

(1) When displaying only the local SIM log file

(a) At the time of maintenance, log in the execution node via ssh from the maintenance PC usually. For the login method, refer to Maintenance Tool "1.3 Procedures for Operating Commands" (MNTT 01-0200).

(b) Execute the syseventlist command.
Figure 2.6.3-1 shows display examples at the time of syseventlist execution when the OS version is 3.2.0-XX or earlier, Figure 2.6.3-2 shows display examples when the OS version is 3.2.0-XX or earlier including the case SIM was issued from Virtual Server, and Figure 2.6.3-2-1 shows display examples when the OS version is 3.2.1-XX or later. For the OS version confirmation, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When the syseventlist command terminated normally, the local SIM log file is displayed and stored in the "/home/service/syseventlist.log" file.
When the syseventlist command terminated abnormally, the local SIM log file is not displayed, and the message ID is displayed. In this case, refer to Maintenance Tool "2.6.4 Command termination messages and actions to be taken (MNTT 02-0400), and take actions.

```
$ sudo syseventlist
Thu May  7 12:02:26 JST 2009
KAQK39502-I OS is ready
Thu May  7 12:15:50 JST 2009
KAQG72013-W Communication via the sub heartbeat cable was interrupted.
  (Repeat for the number of items)
```

Figure 2.6.3-1 Display Examples at the Time of syseventlist Execution (3.2.0-XX or earlier)

```
$ sudo syseventlist
Thu June  7 12:02:26 JST 2011
KAQK39502-I OS is ready
Thu June  7 12:15:50 JST 2011(virtual server time=Thu June  7 12:15:45 JST 2011)
KAQK39502-I OS is ready(virtual server ID=32)
  (Repeat for the number of items)
```

Figure 2.6.3-2 Display Examples at the Time of syseventlist Execution (3.2.0-XX or earlier)

```
$ sudo syseventlist
June  7 12:02:26 DT119000010 KAQK39502-I OS is ready
June  7 12:15:50(virtual server time=June  7 12:15:45) DT119000010 KAQK39502-I OS
is ready(virtual server ID=32)
  (Repeat for the number of items)
```

Figure 2.6.3-2-1 Display Examples at the Time of syseventlist Execution (3.2.1-XX or later)

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(2) When displaying the local SIM log file and acquiring the file

(a) At the time of maintenance, log in the execution node via ssh from the maintenance PC usually.
For the login method, refer to Maintenance Tool "1.3 Procedures for Operating Commands" (MNTT 01-0200).

(b) Execute the syseventlist command.
Figure 2.6.3-3 shows display examples at the time of syseventlist execution.
When the syseventlist command terminated normally, the local SIM log file is displayed and stored in the "/home/service/syseventlist.log" file.
When the syseventlist command terminated abnormally, the local SIM log file is not displayed, and the message ID is displayed. In this case, refer to Maintenance Tool "2.6.4 Command termination messages and actions to be taken" (MNTT 02-0400), and take actions.

```
$ sudo syseventlist
Thu May  7 12:02:26  JST 2009
KAQK39502-I OS is ready
Thu May  7 12:15:50  JST 2009
KAQG72013-W Communication via the sub heartbeat cable was interrupted.
  (Repeat for the number of items)
```

Figure 2.6.3-3 Display Examples at the Time of syseventlist Execution

(c) (When using Putty) Execute the pscp command on the command prompt of the maintenance PC to transfer the file stored in step (b) to the maintenance PC.
For the transfer method, refer to Maintenance Tool "1.3.5 Commands used for transferring files (2) Downloading files to the maintenance PC" (MNTT 01-0240).

```
C:\>pscp -scp -unsafe service@10.213.88.85:syseventlist.log C:\work.
service@10.213.88.85's password:
syseventlist.log          | 0 kB |   0.2 kB/s | ETA: 00:00:00 | 100%
```

Figure 2.6.3-4 Display Examples at the Time of pscp Execution

(d) After completing the transfer, execute the rmfile command, and delete the "/home/service/syseventlist.log" file.

```
$ sudo rmfile syseventlist.log
```

Figure 2.6.3-5 Display Examples at the Time of rmfile Execution

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2.6.4 Command termination messages and actions to be taken

A message may be displayed when the syseventlist command is executed. Actions to be taken against messages are described in Table 2.6.4-1 “Message IDs and Actions to be Taken”.

Table 2.6.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify a correct parameter, and execute the command again.
2	KAQM14136-I	Usage: <*command-syntax*>	Displays the command format.	It is not required to take actions. Displayed when the –h option is specified. Furthermore, it is continuously displayed when KAQM14131-E is displayed.
3	KAQM38003-E	An unexpected error occurred	An internal error has occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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2.7 Checking Network Connection Status (nasping)

The nasping command checks the network connection status.

NOTE: The information may not be displayed immediately due to buffering.

2.7.1 Command line

For the command lines of the nasping command, the following options can be used.

nasping [-4|-6] [-L] [-R] [-d] [-n] [-q] [-r] [-v] [-c number of packets] [-p pattern] [-s packet size] [-t TTL] [-I interface address] IP address

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Table 2.7.1-1 shows the description of the options.

Table 2.7.1-1 Command Options

No.	Option	Description	Remarks
1	-L	Specify when the multi-cast packet loop-back is inhibited.	Use it when the special instruction is issued.
2	-R	Specify when the path from node to the host is displayed.	Use it when the special instruction is issued.
3	-d	Specify when the debug option is set in the socket to be used.	Use it when the special instruction is issued.
4	-n	Specify when the IP address of the host is output without converting to the host name.	Use it when the special instruction is issued.
5	-q	Specify when the only statistic information at the time of transmission start and at the time of transmission completion is displayed.	Use it when the special instruction is issued.
6	-r	Specify when ignoring the routing setting and transmitting the packet directly to the host.	Use it when the special instruction is issued.
7	-v	Specify when referring to the detailed information.	Use it when the special instruction is issued.
8	-c number of packets	Specify the number of packets to be transmitted. The maximum number of packets to be transmitted is 10. When this option is omitted, “10” is set.	Use it when the special instruction is issued.
9	-p pattern	Specify the pattern to fill the packets to transmit. Up to 16 bytes can be specified. This option can be used for diagnosing the problem depending on the data in the network. For example, “-p ff” is specified, the packet all filled by 1 is transmitted	Use it when the special instruction is issued.
10	-s packet size	Specify the size of the data to be transmitted (unit: bytes) When this option is omitted, “56” is set.	Use it when the special instruction is issued.
11	-t TTL	Specify when setting the time of the packet.	Use it when the special instruction is issued.
12	-I interface address	Specify the IP address of the interface to transmit the packet.	Use it when the special instruction is issued.
13	IP address	Specify the target IP address.	If the IPv6 format is specified, put the IP address in a square bracket.
14	-4	Adopt the IPv4 protocol. If this is specified with the -6 option at the same time, adopt the last specified option. If specification is omitted, the IPv4 is adopted.	It is available to specify when the OS version is 3.1.0-XX or later. For details of confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).
15	-6	Adopt the IPv6 protocol. If this is specified with the -4 option at the same time, adopt the last specified option. If specification is omitted, the IPv4 is adopted. Do not omit the specification in case of the IPv6 address.	

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2.7.2 Output format

The output format at the time of nasping command execution is similar to that of the ping command. Refer to Maintenance Tool “2.7.3 Execution procedure” (MNTT 02-0440) for detail.

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2.7.3 Execution procedure

This subsection describes the procedure to check the communication status by executing the nasping command.

(1) At the time of maintenance, log in the execution node via ssh from the maintenance PC usually.
For the login method, refer to Maintenance Tool "1.3 Procedures for Operating Commands" (MNTT 01-0200).

(2) Specify the IP address of the node to be checked, and execute the nasping command.
When the nasping command terminated normally, specified IP address is reachable. The information to be displayed is the same as the ping command. Figure 2.7.3-1 shows the display examples at the time of nasping execution in case the IPv4 is set and Figure 2.7.3-2 shows the display examples at the time of nasping execution in case the IPv6 is set.
If nasping command does not respond such as Figure 2.7.3-3 or 2.7.3-4, specified IP address is not reachable. Please check whether IP address is correct, routing information is appropriate, there is nothing wrong with LAN cable or LAN card.

```
$ sudo nasping 192.168.0.21
PING 192.168.0.21 (192.168.0.21) 56(84) bytes of data.
64 bytes from 192.168.0.21: icmp_seq=1 ttl=64 time=3.88 ms
64 bytes from 192.168.0.21: icmp_seq=2 ttl=64 time=0.090 ms
64 bytes from 192.168.0.21: icmp_seq=3 ttl=64 time=0.089 ms
64 bytes from 192.168.0.21: icmp_seq=4 ttl=64 time=0.103 ms
64 bytes from 192.168.0.21: icmp_seq=5 ttl=64 time=0.101 ms
64 bytes from 192.168.0.21: icmp_seq=6 ttl=64 time=0.099 ms
64 bytes from 192.168.0.21: icmp_seq=7 ttl=64 time=0.145 ms
64 bytes from 192.168.0.21: icmp_seq=8 ttl=64 time=0.095 ms
64 bytes from 192.168.0.21: icmp_seq=9 ttl=64 time=0.093 ms
64 bytes from 192.168.0.21: icmp_seq=10 ttl=64 time=0.142 ms

--- 192.168.0.21 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 8999ms
rtt min/avg/max/mdev = 0.089/0.484/3.888/1.134 ms
```

Figure 2.7.3-1 Display Examples at the Time of nasping Execution (Communication success) [in case IPv4 is specified]

```
$ sudo nasping -6 [fd00::20]
PING fd00::20(fd00::20) 56 data bytes
64 bytes from fd00::20: icmp_seq=1 ttl=64 time=0.023 ms
64 bytes from fd00::20: icmp_seq=2 ttl=64 time=0.027 ms
64 bytes from fd00::20: icmp_seq=3 ttl=64 time=0.027 ms
64 bytes from fd00::20: icmp_seq=4 ttl=64 time=0.021 ms
64 bytes from fd00::20: icmp_seq=5 ttl=64 time=0.035 ms
64 bytes from fd00::20: icmp_seq=6 ttl=64 time=0.026 ms
64 bytes from fd00::20: icmp_seq=7 ttl=64 time=0.026 ms
64 bytes from fd00::20: icmp_seq=8 ttl=64 time=0.029 ms
64 bytes from fd00::20: icmp_seq=9 ttl=64 time=0.027 ms
64 bytes from fd00::20: icmp_seq=10 ttl=64 time=0.028 ms

--- fd00::20 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9005ms
rtt min/avg/max/mdev = 0.021/0.026/0.035/0.007 ms
```

Figure 2.7.3-2 Display Examples at the Time of nasping Execution (Communication success) [in case IPv6 is specified]

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```
$ sudo nasping 192.168.0.23
PING 192.168.0.23 (192.168.0.23) 56(84) bytes of data.
From 192.168.0.20 icmp_seq=1 Destination Host Unreachable
From 192.168.0.20 icmp_seq=2 Destination Host Unreachable
From 192.168.0.20 icmp_seq=3 Destination Host Unreachable
From 192.168.0.20 icmp_seq=5 Destination Host Unreachable
From 192.168.0.20 icmp_seq=6 Destination Host Unreachable
From 192.168.0.20 icmp_seq=7 Destination Host Unreachable
From 192.168.0.20 icmp_seq=8 Destination Host Unreachable
From 192.168.0.20 icmp_seq=9 Destination Host Unreachable
From 192.168.0.20 icmp_seq=10 Destination Host Unreachable

--- 192.168.0.23 ping statistics ---
10 packets transmitted, 0 received, +9 errors, 100% packet loss, time 9004ms, pipe 3
```

Figure 2.7.3-3 Display Examples at the Time of nasping Execution (Communication failure) (1)

```
$ sudo nasping 11.213.30.140
PING 11.213.30.140 (11.213.30.140) 56(84) bytes of data.

--- 11.213.30.140 ping statistics ---
10 packets transmitted, 0 received, 100% packet loss, time 8999ms
```

Figure 2.7.3-4 Display Examples at the Time of nasping Execution (Communication failure) (2)

When the nasping command terminated abnormally, the connection status with the host is not displayed, and the message ID is displayed. In this case, refer to Maintenance Tool “2.7.4 Command termination messages and actions to be taken” (MNTT 02-0450), and take actions.

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2.7.4 Command termination messages and actions to be taken

A message may be displayed when the nasping command is executed. Actions to be taken against messages are described in Table 2.7.4-1 “Message IDs and Actions to be Taken”.

Table 2.7.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	– (*1)	nasping: bad number of packets to transmit.	The number of packets of 11 or more is specified for the –c option.	Set the value of 10 or less, and execute the command again.
2	– (*1)	nasping: invalid option - <*option*> (*2)	An error exists in the parameter.	Specify a correct parameter, and execute the command again.
3	– (*1)	An internal error occurred. (failed in the lock. errno.)	An exclusive control error occurred.	In case of the OS version earlier than 3.1.0-XX, wait a while and then retry. In case of the OS version 3.1.0-XX or later, retry after executing the eraselog command. If an error occurs again, collect the OS Log and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300). For the details of eraselog command, refer to Maintenance Tool “2.82 Deleting Logs Created in Executing Commands (eraselog)” (MNTT 02-4320). For details of confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).
4	– (*1)	(Other message)	An internal error has occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

*1: The message ID is not displayed.
*2: In the actual <*option*>, the characters specified as the parameter are displayed.

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2.8 Recovering the Disk/Cluster Management LU (syslurestore)

This command executes batch recovery (when all of the system fails, restore the OS disk of the both nodes and the cluster management LU at the same time by using the system setting information file) or individual recovery (when one of OS disk or cluster management LU fails, restore the failure OS Disk or the failure cluster management LU by using the system setting information file stored in the HDI) of the OS Disk and the cluster management LU.
In the single node configuration, the individual recovery of the OS Disk/cluster management LU is not supported.

2.8.1 Command line

This command uses the following command lines. Select the command line to use depending on the maintenance requirement.

- To recover the OS Disk/cluster management LU in a batch in the single node configuration or the cluster configuration:
  syslurestore -f system-setting-information-file-name

- To recover the entire data recovery in a batch in the single node configuration or the cluster configuration (This is for the system administrator):
  syslurestore --trans [--system-only] [--system-name *System-Name*]

- To recover the OS Disk:
  syslurestore -s osdisk IP-address-of-the-other-side-system's-management-port

- To recover the cluster management LU:
  syslurestore -s cmlu

- To display the command format on the standard output:
  syslurestore -h

Table 2.8.1-1 shows the description of each option.

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Table 2.8.1-1 Command Options

No.	Option	Description	Remarks
1	-f setting-information-file-name	Specify a setting information file name to be used for recovery. (User LU information is not recovered.)	Specify the name of the system setting information file. Request the system administrator to upload the system setting information file to Hitachi File Services Manager (hereinafter referred to as HFSM).
2 (*1)	-s osdisk IP-address-of-the-other-side-system's-management-port	Specify the IP address of the management port of the other side system's node.	This is not supported in the single node configuration.
3 (*1)	-s cmlu	Specify this to recover the cluster management LU.	This is not supported in the single node configuration.
4 (*2) (*3)	--trans	Specify this to recover the all data including user data by transferring the system setup information from HCP.	This is an option for the system administrator. The maintenance personnel should not specify it. If the maintenance personnel specifies it by mistake, press [Ctrl]+[D].
5 (*2) (*3)	--system-only	Specify this to recover the all data as described in the item 4 but not including user data.	This is an option for the system administrator. The maintenance personnel should not specify it.
6 (*2) (*4)	--system-name System-name	Regarding No.4, when system setup information for two or more systems is stored on one tenant, specify a system name to be recovered (in the case of Physical Node: cluster name, otherwise: host name.)	This is an option for the system administrator. The maintenance personnel should not specify it.
7	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

*1: When executing the options No. 2 and No. 3, full save of the system LU must have been executed in advance so that the system setting information is stored within the system.

*2: Because this option is for the system administrator, the maintenance personnel must not operate it by specifying this option. This is an option to be used by the system administrator when the RAID controller failure or the OS data failure occurs in the single node configuration and it is requested to the system administrator to recover the data, after the initial installation is executed by the maintenance personnel. Execution by specifying this option must get the information of HCP to be connected (Host IP address, Tenant name, and account information) in advance. In the cluster configuration, the data port information (IP address, net mask, routing) in the cluster configuration is required in advance.
The procedures before the recovery by specifying this option, refer to "Theory '3.2.7 Restoration of Data in the node in the single node configuration' (THEO 03-0210)".
For the reference place in User's Guide describing the order of this procedure execution by specifying this option, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 6 'syslurestore" (GENE 00-0060)".

*3: Available if the OS version is 2.2.1-XX and later. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

*4: Available if the OS version is 4.0.0-XX and later. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

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2.8.2 Execution procedure

This subsection describes the procedure for executing the syslurestore command.
For the batch recovery of the OS Disk/cluster management LU, refer to 2.8.2 (1) Batch Recovery of the OS Disk/cluster management LU.
For recovery of the OS Disk, refer to Maintenance Tool "2.8.2 (2) Recovery of the OS Disk" (MNTT 02-0500).
For recovery of the cluster management LU, refer to Maintenance Tool "2.8.2 (3) Recovery of the cluster management LU" (MNTT 02-0520).
In the case of single node configuration, refer to Maintenance Tool "2.8.2 (4) To recover data in the single node configuration" (MNTT 02-0531).

(1) Batch Recovery of the OS Disk/cluster management LU
If a failure occurs in the OS Disk/cluster management LU, the OS may not operate properly which may cause the system not to recognize correctly the configuration (file system, NFS/CIFS shared).
The maintenance personnel must newly install the system for the both nodes. And the system administrator executes the batch recovery of the OS Disk/cluster management LU. Using the system setting information file, which is uploaded to the /home/nasroot by the system administrator by HFSM or using scp command.

NOTE:
- The recovery of user data cannot be executed with this command. To execute the recovery of user data at the same time, request the system administrator to do it.
- Request the system administrator to prepare the system setting information file that have been stored in advance to be used for batch recovery of the OS Disk/cluster management LU ahead of time.
- After the recovery, the system configuration returns to the status at the time of the system setting information file was acquired. Configuration changes after acquisition of the system setting information file cannot be restored.
- Do not use the system setting information file for recovery of other cluster devices.

The procedure for execution is as described below:

(a) Newly install the system to both nodes. For details about how to install the system newly, refer to "Set Up 'Chapter 3 New Installation' (SETUP 03-0000)".
If this procedure is already completed, go to the step (b).

(b) Perform the setting after completing the installation. For details about setting, refer to "Set Up '5.1 Setting/Confirmation after New Installation' (SETUP 05-0000)".

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(c) Request the system administrator to upload the system setting information file by using HFSM. Check the names of the system setting information file and the node to which the file is uploaded.
For the reference place in User's Guide describing the details about uploading by using HFSM, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Uploading a system configuration file'' (GENE 00-0050)".
However, if the maintenance personnel saves the system setting information file in the maintenance PC, the maintenance personnel must upload the system setting information file. After completing the upload, request the system administrator to copy the system setting information file under "/home/nasroot". In the case that the OS version is from 5.4.1-XX to 5.7.0-XX, otherwise the OS version is 6.1.1-XX or later, and that the security enhancement is enabled, the system administrator is not able to copy the system setting information file. The maintenance personnel should request the customer to acquire the permission for uploading the system setting information file to the "/home/nasroot" using the scp command with "nasroot" account. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

(d) Log in to the node to which the system setting information file was uploaded in the step (c) via ssh from the maintenance PC.
For details about how to log in to a node, procedure, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

NOTE: Log in to the node to which the system setting information file was uploaded.

(e) Execute "ls /home/nasroot", and then confirm that the uploaded system setting information file is existed in the displayed filename.

(f) Copy the subject of system setting information file name by dragging and right-clicking the file.

(g) Paste the system setting information file name which is copied at the step (f) to the command in accordance with Figure 2.8.2-1 "Example of the syslurestore Command Execution (Batch Recovery of the OS Disk/Cluster Management LU)", and then execute the syslurestore command.
When any other message ID than KAQM13133-Q is displayed, refer to Maintenance Tool "2.8.3 Command termination messages and action to be taken" (MNTT 02-0540).
Repeat the procedure from the step (c) after completing the action.

```
$ sudo syslurestore –f sysbk_FC-GWFBQLNBX_20090508_1020.tgz
```

Figure 2.8.2-1 Execution Example of the syslurestore Command (Batch Recovery of the OS Disk/Cluster Management LU)

NOTE: Be careful of uppercase and lowercase letters of a file name.

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(h) When step (g) is executed, a confirmation message is displayed in Figure 2.8.2-3 "Confirmation Message (KAQM13133-Q) for the syslurestore Command Execution". Enter "y" to start execution. Batch recovery of the OS Disk/cluster management LU is executed.
To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.8.3 Command termination messages and action to be taken" (MNTT 02-0540).
Repeat the procedure from the step (c) after completing the action.

```
$ sudo syslurestore -f sysbk_FC-GWFBQLNBX_20090508_1020.tgz
KAQM13133-Q Processing might take a while. Do you want to restore the settings for
the cluster management LU and both of the OS Disks in the cluster by using the saved
file (saved date and time = 2009/07/15 00:10)? (y/n) y
```

Figure 2.8.2-2 Confirmation Message (KAQM13133-Q) for the syslurestore Command Execution

NOTE: It takes 1 to 3 minutes to complete the command processing.

(i) After completion of recovery, the KAQM13131-I message is displayed and the OS reboots automatically at both nodes.
However, when the OS version is 3.2.1-XX or later, the progress message is displayed and the KAQM13131-I message is displayed after completing the recovery. Figure 2.8.2-2-1 is an execution example when the OS version is 4.0.0-XX or later. If the OS version is 3.2.3-XX or earlier, the output message will differ slightly.
If a message ID is displayed while the command execution is in progress, refer to Maintenance Tool "2.8.3 Command termination messages and action to be taken" (MNTT 02-0540).
Repeat the procedure from the step (c) after completing the action.

```
$ sudo syslurestore -f sysbk_FC-GWT119000010_20090508_1020.tgz
KAQM13133-Q Processing might take a while. Do you want to restore the system settings by using the
specified file (saved date and time = 2009/07/15 00:10)? (y/n) y
System configuration restore starts. (remaining time = 70 seconds)
  Step 1/7 Performing pre-processing.  (remaining time = 70 seconds)
  Step 2/7 Decompression of system backup file. (remaining time = 60 seconds)
  Step 3/7 Initialization of management area-1. (remaining time = 50 seconds)
  Step 4/7 Initialization of management area-2 (remaining time = 40 seconds)   } Progress message
  Step 5/7 Initialization of management area-3 (remaining time = 30 seconds)
  Step 6/7 Restoring the system files. (remaining time = 20 seconds)
  Step 7/7 Performing post-processing. (remaining time = 10 seconds)
KAQM13131-I The settings for the cluster management LU and both OS Disks in the cluster have been
restored, and the OSs in the cluster have been restarted. After restarting the OSs, define a cluster.
```

Figure 2.8.2-2-1 Progress Message of the syslurestore Command Execution

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(j) Check if both nodes are rebooted. If both are rebooted, the logon prompt is displayed on the console window. For details about the logon prompt window, refer to "Set Up '1.3 Startup Confirmation of the OS by using KVM' (SETUP 01-0010)".

(k) Request the system administrator to perform the following operations.
- Redefine the cluster.
  For the reference place in User's Guide describing the details about cluster definition, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Defining a cluster configuration'' (GENE 00-0040)".
- Start the cluster and start the resource group of the both nodes.
  For the reference place in User's Guide describing the details about cluster startup, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Stopping and starting a cluster'' (GENE 00-0040)".
  For the reference place in User's Guide describing the details about resource group startup, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Stopping and starting a resource group'' (GENE 00-0040)".

(*l*) After completion of the step (k), check that "Cluster Status" is "ACTIVE," that "Node Status" of both nodes is "UP," and that the resource group "Online/No error".
For the checking method of the cluster status and the resource group status, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(m) Check the SIM message at both nodes. Check that no error level message is output. For the checking method of SIM messages, refer to Maintenance Tool "2.6 Displaying SIMs on This Side (syseventlist)" (MNTT 02-0360).
When a message is output, take proper action according to the message. For details about actions to be taken, refer to "C.3 Messages".

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(2) Recovery of the OS Disk
If a failure occurs in the OS Disk, the OS may not operate properly which may cause the system not to recognize correctly the configuration information (file system, NFS/CIFS shared).
The maintenance personnel must newly install the system for the nodes to be restored, and perform recovery of the OS Disk. For recovery, they use the system setting information on the system which was saved automatically or manually by Hitachi File Services Manager.

NOTE:
- Request the system administrator beforehand to check the saved date of the system setting information.
- Check with the system administrator if there is no change between the system information in the system setting information stored at the displayed date and the current system information to be restored from now on.
- After recovery, the configuration returns to the status when the system setting information was saved. Configuration changes after the saving of the system setting information cannot be restored.

(a) Execute the newly installation to the node to be restored. For details about how to install the system newly, refer to "Set Up 'Chapter 3 New Installation' (SETUP 03-0000)".
If this procedure is already completed, go to the step (b).

(b) Perform the setting after completing the installation. For details about setting, refer to "Set Up '5.1 Setting/Confirmation after New Installation' (SETUP 05-0000)".

(c) The management port IP address of the other side node is necessary when executing a command. Therefore, acquire the management port IP address of the other side node with one of the following methods.
- Request the system administrator the management port IP address of the other side node.
- Execute the mngiflist command at the other side node as shown in figure 2.8.2-3, and acquire the management port IP address of this side node which is enclosed with a frame. (To restore the OS Disk on the side of node0, the IP address on the side of node1 must be acquired.)

For details about the mngiflist command, refer to Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800).

```
$ sudo mngiflist
Interface          : mng0
node 1(DGBQLNBX)
Fixed IP addr      : 192.168.0.21
Netmask            : 255.255.255.0
node 0(DFBQLNBX)
Fixed IP addr      : 192.168.0.20
Netmask            : 255.255.255.0
MTU                : 1500
```

Figure 2.8.2-3 Execution Example of the mngiflist Command from the Side of Node1

(d) Log in to the execution node via ssh from the maintenance PC. For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

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(e) Set the other side node's management port IP address acquired in the step (c) to the command and execute the syslurestore command in accordance with Figure 2.8.2-4 “Example of the syslurestore Command Execution (Recovery of the OS Disk)”.
When any other message ID than KAQM13122-Q is displayed, refer to Maintenance Tool “2.8.3 Command termination messages and action to be taken” (MNTT 02-0540).
Repeat the procedure from the step (a) after completing the action.

```
$ sudo syslurestore -s osdisk 192.168.0.21
```

Figure 2.8.2-4 Execution Example of the syslurestore Command (Recovery of the OS Disk)

(f) When the step (e) is executed, a confirmation message is displayed as in Figure 2.8.2-5 “Confirmation Message (KAQM13122-Q) for the syslurestore Command Execution”. Enter “y” to start execution. Recovery of the OS Disk starts.
To cancel the execution, enter “n”.
When a message ID is displayed, refer to Maintenance Tool “2.8.3 Command termination messages and action to be taken” (MNTT 02-0540).
Repeat the procedure from the step (a) after completing the action.

```
$ sudo syslurestore -s osdisk 192.168.0.21
KAQM13122-Q Processing might take a while. Do you want to restore the OS Disks
by using the saved settings (saved date and time = 2009/07/15 00:10)? (y/n) y
```

Figure 2.8.2-5 Confirmation Message (KAQM13122-Q) for the syslurestore Command Execution

NOTE: It takes 2 to 5 minutes to complete the command processing.

(g) After the completion of recovery, the KAQM13134-I message is displayed and the OS reboots automatically at the execution node.

(h) Check that the execution node is rebooted.
To confirm that the node has been rebooted, execute the peerstatus command from the other side node and check that [BOOT COMPLETE] is shown.
For the checking method, refer to Maintenance Tool “2.36 Displaying the Status of Other Side Node (peerstatus)” (MNTT 02-2130).

NOTE: Wait for about 10 minutes until the completion of reboot.

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(i) Request the system administrator to perform the following operations for the execution node.
- Change “Node Status” of the node to “UP” and failback the resource group.
  For the reference place in User’s Guide describing the details about failover/failback of a resource group, refer to “General ‘Reference Place in User's Guide for Operating Procedures Table 4 ‘Changing the execution node of a resource group’’ (GENE 00-0040)”.

(j) After completion of failback, check the cluster status. Check that “Cluster Status” is “ACTIVE,” that “Node Status” of both nodes is “UP,” and that the resource group is “Online/No error”.
For the checking method of the cluster status and the resource group status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

(k) Check the SIM message at the both nodes, and check that no error level message is output. For the checking method of SIM messages, refer to Maintenance Tool “2.6 Displaying SIMs on This Side (syseventlist)” (MNTT 02-0360).
When a message is output, refer to “C.3 Messages” and take proper action.

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(3) Recovery of the cluster management LU
If a failure occurs in the cluster management LU, the OS may not operate properly which may cause the system not to recognize correctly the system configuration (file system, NFS/CIFS shared).
The maintenance personnel executes recovery of the cluster management LU using the system settings information on the system which was saved automatically or manually by Hitachi File Services Manager.

NOTE:
- Request the system administrator beforehand to check the saved date of the system setting information.
- Check with the system administrator if there is no change between the system information in the system setting information stored at the displayed date and the current system information to be restored from now on..
- After recovery, the configuration returns to the status when the system setting information was saved. Configuration changes after the saving of the system setting information cannot be restored.

(a) Reboot the OS of the node1.

(a-1) Log in to the node1 from the maintenance PC via ssh.
For details about how to log in to a node, procedure, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(a-2) Execute nasreboot command with “--force” option.
For details of nasreboot command, refer to Maintenance Tool “2.29 Rebooting the OS of This Side Node (nasreboot)” (MNTT 02-1790).

(a-3) Log in to the node0 from the maintenance PC via ssh.
For details about how to log in to a node, procedure, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(a-4) Make sure that the OS reboot of the node1 is completed from node0.
Execute the peerstatus command from the node0, and check that [BOOT COMPLETE] is shown.
For details about how to check node status, refer to Maintenance Tool “2.36 Displaying the Status of Other Side Node (peerstatus)” (MNTT 02-2130).

(b) Reboot the OS of the node0.

(b-1) Execute nasreboot command with “--force” option.
For details of nasreboot command, refer to Maintenance Tool “2.29 Rebooting the OS of This Side Node (nasreboot)” (MNTT 02-1790).

(b-2) Log in to the node1 from the maintenance PC via ssh.
For details about how to log in to a node, procedure, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b-3) Make sure that the OS reboot of the node0 is completed from node1.
Execute the peerstatus command from the node1, and check that [BOOT COMPLETE] is shown.
For details about how to check node status, refer to Maintenance Tool “2.36 Displaying the Status of Other Side Node (peerstatus)” (MNTT 02-2130).

(c) Log in to the node0 via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

NOTE: Perform recovery of the cluster management LU on the node0 side.

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(d) Execute the syslurestore command in accordance with Figure 2.8.2-6 “Example of the syslurestore Command Execution (Recovery of the Cluster Management LU)”.
When any other message ID than KAQM13123-Q is displayed, refer to Maintenance Tool “2.8.3 Command termination messages and action to be taken” (MNTT 02-0540).
Perform a proper action and repeat the procedure from the step (a).

```
$ sudo syslurestore -s cmlu
```

Figure 2.8.2-6 Execution Example of the syslurestore Command (Recovery of the Cluster Management LU)

(e) When the step (d) is executed, a confirmation message is displayed as shown in Figure 2.8.2-7 “Confirmation Message (KAQM13123-Q) for the syslurestore Command Execution”. Enter “y” to start execution. Recovery of the cluster management LU starts.
To cancel the execution, enter “n”.
When a message ID is displayed, refer to Maintenance Tool “2.8.3 Command termination messages and action to be taken” (MNTT 02-0540).
Perform a proper action and repeat the procedure from the step (a).

```
$ sudo syslurestore -s cmlu
KAQM13123-Q Processing might take a while. Do you want to restore the cluster
management LU by using the saved settings (saved date and time = 2009/07/15
00:10)? (y/n) y
```

Figure 2.8.2-7 Confirmation Message (KAQM13123-Q) for the syslurestore Command Execution

NOTE: It takes 2 to 5 minutes to complete the command processing.

(f) After completion of recovery, the KAQM13132-I message is displayed and the OS reboots automatically at both nodes.

(g) Check if both nodes are rebooted. If both are rebooted, the logon prompt is displayed on the console window. For details about the logon prompt window, refer to “Set Up ‘1.3 Startup Confirmation of the OS by using KVM’ (SETUP 01-0010)”.

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(h) Request the system administrator to perform the following operations.

NOTE: When a failure includes the cluster management LU and the User LU of HDI in the same RAID group, and if this procedure is executed only to recover the cluster management LU, request the system administrator only to define the cluster and do not execute the afterward procedures.
When a failure only includes the cluster management LU of HDI, execute the procedures according to the following.

- Redefine the cluster.
  For the reference place in User's Guide describing the details about cluster definition, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Defining a cluster configuration'' (GENE 00-0040)".
- Start the cluster and start the resource group of the both nodes.
  For the reference place in User's Guide describing the details about cluster startup, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Stopping and starting a cluster'' (GENE 00-0040)".
  For the reference place in User's Guide describing the details about resource group startup, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Stopping and starting a resource group'' (GENE 00-0040)".

(i) After completion of resource group is started, check the cluster status. Check that "Cluster Status" is "ACTIVE," that "Node Status" of both nodes is "UP," and that the resource group is "Online/No error".
For the checking method of the cluster status and the resource group status, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(j) Check the SIM message at the both nodes, and check that no error level message is displayed. For the checking method of SIM messages, refer to Maintenance Tool "2.6 Displaying SIMs on This Side (syseventlist)" (MNTT 02-0360).
When a message is displayed, take proper action according to the message. For details about actions to be taken, refer to "C.3 Messages".

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(4) To recover data in the single node configuration
When a failure occurred in the single node configuration, OS does not work correctly and system configuration information (file system, NFS/CIFS share) might not be recognized correctly by the system. After initial installation is done by the maintenance personnel, the maintenance personnel executes the batch recovery of the OS Disk/Cluster Management LU in accordance with request by the system administrator. Using the system setting information file, which is uploaded to the "/home/nasroot" by the system administrator using the management GUI or scp command.

NOTE:
- The recovery of user data cannot be executed with this command. To execute the recovery of user data at the same time, request the system administrator to do it.
- Request the system administrator to prepare the system setting information file that have been stored in advance to be used for batch recovery of the OS Disk/cluster management LU ahead of time.
- After the recovery, the system configuration returns to the status at the time of the system setting information file was acquired. Configuration changes after acquisition of the system setting information file cannot be restored.
- Do not use the system setting information file for recovery of other cluster devices.

The procedure for execution is as described below:

(a) Execute the initial installation.
For details about how to install the system newly, refer to "Set Up 'Chapter 3 New Installation' (SETUP 03-0000)".
If this procedure is already completed, proceed to the step (b).

(b) Perform the setting after completing the installation. For details about setting, refer to "Set Up '5.1 Setting/Confirmation after New Installation' (SETUP 05-0000)".

(b-1) Request the system administrator to execute the batch recovery of the OS Disk / Cluster Management LU, and after that proceed to step(k).
In the case the system administrator cannot execute the batch recovery of the OS Disk / Cluster Management LU, the maintenance personnel have to execute them. In this case, proceed to step(c).

(c) Request the system administrator to upload the system setting information file by using GUI for management. Check the names of the system setting information file and the node to which the file is uploaded.
For the reference place in User's Guide describing the details about uploading by using GUI for management, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 5 'Uploading a system configuration file'' (GENE 00-0060)".
If the maintenance personnel store the system setting information file on the maintenance PC, the maintenance personnel should upload the system setting information file. After completing the uploading, request the system administrator to copy the file under "/home/nasroot." For the details about the file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
After completion of the copy, delete the uploaded file.
For the details about file deletion, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)' (MNTT 02-1660).

(d) Log in to the node to which the system setting information file was uploaded in the step (c) from the maintenance PC via ssh.
For details about how to log in to a node, procedure, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(e) Execute "ls /home/nasroot", and then confirm that the uploaded system setting information file exists in the displayed filename.

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(f) Copy the subject of system setting information file name by dragging and right-clicking the file.

(g) Paste the system setting information file name which is copied to the command at the step (f) in accordance with Figure 2.8.2-8 "Execution Example of syslurestore Command (When recover the data in the single node configuration)", and then execute the syslurestore command.
When any other message ID than KAQM13133-Q is displayed, refer to Maintenance Tool "2.8.3 Command termination messages and action to be taken" (MNTT 02-0540).
Repeat the procedure from the step (c) after completing the operation.

```
$ sudo syslurestore –f sysbk_FC-GWFBQLNBX_20090508_1020.tgz
```

Figure 2.8.2-8 Execution Example of the syslurestore Command (When recover the data in the single node configuration)

NOTE: Be careful to input uppercase and lowercase letters of a file name directly.

(h) When step (g) is executed, a confirmation message is displayed in Figure 2.8.2-9 "Confirmation Message (KAQM13133-Q) for the syslurestore Command Execution". Enter "y" to start execution.
Batch recovery of the OS Disk/cluster management LU is executed.
To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.8.3 Command termination messages and action to be taken" (MNTT 02-0540).
Repeat the procedure from the step (c) after completing the operation.

```
$ sudo syslurestore -f sysbk_FC-GWFBQLNBX_20090508_1020.tgz
KAQM13133-Q Processing might take a while. Do you want to restore the settings
for the cluster management LU and both of the OS Disks in the cluster by using the
saved file (saved date and time = 2009/07/15 00:10)? (y/n) y
```

Figure 2.8.2-9 Confirmation Message (KAQM13133-Q) for the syslurestore Command Execution

NOTE: It takes 1 to 3 minutes to complete the command processing.

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(i) After completion of recovery, the KAQM13131-I message is displayed and the OS reboots automatically.
However, when the OS version is 3.2.1-XX or later, the progress message is displayed as shown in Figure 2.8.2-10 and the KAQM13171-I message is displayed after completing the recovery.
If a message ID is displayed while the command execution is in progress, refer to Maintenance Tool "2.8.3 Command termination messages and action to be taken" (MNTT 02-0540).
Repeat the procedure from the step (c) after completing the action.

```
$ sudo syslurestore -f sysbk_FC-GWFBQLNBX_20090508_1020.tgz
KAQM13133-Q Processing might take a while. Do you want to restore the settings for
the cluster management LU and both of the OS Disks in the cluster by using the saved
file (saved date and time = 2009/07/15 00:10)? (y/n) y
System configuration restore starts.
  Step 1/7
  Step 2/7
  Step 3/7
  Step 4/7
  Step 5/7
  Step 6/7
  Step 7/7
KAQM13171-I The settings for the cluster management LU and the OS Disk have been
restored, and the OS has been restarted.
```

Progress message

Figure 2.8.2-10 Progress Message of the syslurestore Command Execution

(j) Make sure that the OS reboot is completed. To confirm this can be done when the login prompt is displayed on the console window. Refer to "Set Up '1.5 Startup Confirmation of OS by using Remote Console' (SETUP 01-0010)".

(k) Log in to the execution node via ssh, and check the resource group status. For the confirmation method, refer to Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380).

(*l*) Request the system administrator to recovery the user data.

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2.8.3 Command termination messages and action to be taken

A message may be displayed when the syslurestore command is executed. Actions to be taken against messages are described in Table 2.8.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.8.3-1 Message IDs and Actions to be Taken (1/6)

No.	Message ID	Message	Description	Action
1	KAQM13019-E	An attempt to read the management information has failed.	Failed to read the management information.	Check the settings of the OS Disk and the cluster management LU. Also check if a failure has occurred. Then execute the command again. If the SIM of "KAQG72026-E" is output in the other side node, execute forcelurelease command from the other side node, and then execute the command again. For details about forcelurelease command, refer to Maintenance Tool "2.45 Forced Release of LU Access Protection for the Cluster Management LU and All Users LU (forcelurelease)" (MNTT 02-2560), and then execute the procedure (4) and (5).
2	KAQM13037-E	An attempt to update the management information has failed.	Failed to update the management information.	
3	KAQM13065-E	A timeout occurred during access of management information.	Timeout occurred while accessing the management information.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM13067-E	The uploaded file cannot be used.	The specified file may be invalid or broken.	Request the system administrator to upload the system setting information file to be restored.
5	KAQM13074-E	The operation could not be executed because the node cannot communicate.	There is a node that cannot make communication via the Management port connection.	Check the followings. - Check with the system administrator if the interface settings or the routing settings of the management port affect the communication between nodes. - Check if the node is stopped. - Check if a network error has occurred (except the management port). Refer to "B.3.1 Displaying the Hardware Status (hwstatus)". After checking the above items, execute the command again. If the error occurs again, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.8.3-1 Message IDs and Actions to be Taken (2/6)

No.	Message ID	Message	Description	Action
6	KAQM13082-E	The specified file does not exist. (file=<*file-name*>)	The specified file could not be found.	Check the specified system setting information file name and execute the command again.
7	KAQM13121-E	Processing was canceled because the cluster management LU could not be accessed. (model name = <*model name*>, serial number = <*serial number*>, LDEV number = <*LDEV number*>)	The process was canceled because it could not be accessed to the cluster management LU.	Execute the "C.2.2 Determination Procedure when a Failure Occurred". If the SIM of "KAQG72026-E" is output in the other side node, execute forcelurelease command from the other side node, and then execute the command again. For details about forcelurelease command, refer to Maintenance Tool "2.45 Forced Release of LU Access Protection for the Cluster Management LU and All Users LU (forcelurelease)" (MNTT 02-2560), and then execute the procedure (4) and (5).
8	KAQM13122-Q	Processing might take a while. Do you want to restore the OS Disks by using the saved settings (saved date and time = <*saved date and time*>)? (y/n)	Processing takes time. Do you want to recover the OS Disk?	Enter "y" to start the recovery process or "n" to cancel the process.
9	KAQM13123-Q	Processing might take a while. Do you want to restore the cluster management LU by using the saved settings (saved date and time = <*saved date and time*>)? (y/n)	Processing takes time. Do you want to recover the cluster management LU?	
10	KAQM13124-E	The specified management LAN IP address is invalid. (IP address = <*IP address*>)	The unique IP address of the specified management port is invalid.	Check the unique IP address of the specified management port and execute the command again. For details about how to check the IP address of the management port, refer to Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800).
11	KAQM13130-E	Processing was canceled because a new installation has not been performed for an OS.	Recovery process stops because the system is not newly installed.	Newly install the system according to the recovery procedure before executing the recovery process.
12	KAQM13131-I	The settings for the cluster management LU and both OS Disks in the cluster have been restored, and the OSs in the cluster have been restarted. After restarting the OSs, define a cluster.	Recovery of the settings information was completed.	After completion of OS reboot, request the system administrator to configure the cluster.
13	KAQM13132-I	The cluster management LU has been restored, and the OSs in the cluster have been restarted. After restarting the OSs, define a cluster.	Recovery of the cluster management LU was completed.	

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Table 2.8.3-1 Message IDs and Actions to be Taken (3/6)

No.	Message ID	Message	Description	Action
14	KAQM13133-Q	Processing might take a while. Do you want to restore the settings for the cluster management LU and both of the OS Disks in the cluster by using the saved file (saved date and time =<*saved date and time*>)? (y/n)	Processing takes time. Do you want to recover the settings using the specified file?	Enter “y” to start the recovery process or “n” to cancel the process.
15	KAQM13134-I	An OS Disk has been restored, and an OS in the cluster has been restarted.	Recovery of the OS Disk was completed.	After completion of OS reboot, request the system administrator to start the cluster and the resource group of the node.
16	KAQM13135-E	Processing was canceled because the settings are not present in the system.	The setting information is not saved.	Request the system administrator to upload the system setting information file. Then execute batch recovery of the OS Disk and the cluster management LU.
17	KAQM13136-E	An attempt to recover the OS Disk has failed.	Failed to recover the internal drive.	Check the settings of the OS Disk and the cluster management LU. Also check if a failure has occurred. Then execute the command again.
18	KAQM13137-E	An attempt to restore the cluster management LU has failed. (failed process = <*failed process*>)	Failed to recover the cluster management LU.	
19	KAQM13138-E	The OS Disk could not be recovered because an attempt at synchronization between clusters has failed.	Failed to synchronize operations among clusters. The internal drive could not be recovered.	Check if the IP address of the management port is the same as when the setting information was saved, if the node is stopped, or if a network error has occurred. After the confirmation, execute the command again. If the error occurs again, execute the “C.2.2 Determination Procedure when a Failure Occurred”.
20	KAQM13139-E	A timeout occurred during the restoration of an OS Disk.	Timeout occurred while recovering the internal drive.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
21	KAQM13140-E	A timeout occurred during the restoration of a cluster management LU.	Timeout occurred while recovering the cluster management LU.	
22	KAQM13142-E	The operation could not be performed because the restoration of a OS Disk timed out. (node = <*node*>)	Timeout occurred while recovering the internal drive. The full recovery could not be executed.	
23	KAQM13143-E	The operation could not be performed because the restoration of the cluster management LU timed out.	Timeout occurred while recovering the cluster management LU. The full recovery could not be executed.	

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Table 2.8.3-1 Message IDs and Actions to be Taken (4/6)

No.	Message ID	Message	Description	Action
24	KAQM13141-W	The cluster management LU was successfully restored, but some of the settings could not be restored. As a result, the settings might have to be re-configured. (affected settings = <*affected settings*>)	The cluster management LU was recovered normally. But some of the settings may not have been recovered.	Request the system administrator to redefine the cluster configuration, and reset the setting information (Virtual IP address setting, or NFS share setting) described in the message. For the reference place in User's Guide describing the details about the procedure of cluster definition, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Defining a cluster configuration'' (GENE 00-0040)".
25	KAQM13144-E	An attempt to restore system settings failed. (failed process = <*failed process*>)	Failed in batch recovery of the OS Disk/cluster management LU.	Check the settings of the OS Disk and the cluster management LU. Also check if a failure has occurred. Then execute the command again.
26	KAQM13156-E	Processing was canceled because the specified settings file is created by the system of the version that was not supported. (version of settings file = <*version of settings file*>)	A setting information file of a different version was specified.	Refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060) and check the version shown in the message. If the version is correct, request the system administrator to upload the system setting information file of the correct version, and then execute the command again.
27	KAQM13157-E	Processing was canceled because the specified settings file was acquired from a different management LAN network. (the management IP address of settings file = <*management IP address*>)	The setting information file different from the unique IP address of the management port LAN is specified. (This message is output at the time of batch recovery of OS Disk/ cluster management LU)	Check if the unique IP address of the management port LAN, which is set after the newly installation is the same as the IP address shown in the message. If the IP address is different, change the IP address by referring to Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840). If there is no problem on the above setting, request the system administrator to upload the correct system setting information file.

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Table 2.8.3-1 Message IDs and Actions to be Taken (5/6)

No.	Message ID	Message	Description	Action
28	KAQM13158-E	Processing was canceled because the setting of the fixed IP address of the management LAN was different. (the management IP address at the time of the save = <*management IP address*>)	The unique IP address of the management port LAN is different than the setting at the time of saving. (This message is output at the time of restoring OS Disk).	Check if the unique IP address of the management port LAN in the other node is correct or not. For details, refer to Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800). When there is no problem on the above setting, change the unique IP address of the management port LAN to the one before the occurrence of this problem. For details, refer to Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840).
29	KAQM13171-I	The settings for the cluster management LU and the OS Disk have been restored, and the OS has been restarted.	Recovery processing of the setup information is completed.	—
30	KAQM13173-E	Processing was canceled because the data of the specified settings file was acquired by a system with a different configuration.	The setting information that is acquired by the different configuration system is specified.	Request the system administrator to upload the system setting information file that is the subject to be restored.
31	KAQM13185-Q	Processing might take about <*processing_time*> seconds. Do you want to restore the settings for the system by using the saved file (saved date and time = <saved date and time>)? (y/n)	It takes much time to process this operation. Do you want to restore the setting information by using specified file?	The execute restoration, press "y". To cancel the operation, press "n". Detailed processing time is not displayed when the OS version is 4.0.0-XX or earlier.
32	KAQM13186-W	Processing to restore the system settings ended, but some of the settings could not be restored. Those settings might have to be re-set. Check the system messages, and then follow the instructions in the messages.	Although the restoration process of the setting information is completed normally, a part of setting information cannot be restored. Therefore, it might be needed to set the information again.	Cooperate with the system administrator, and execute the rest of failure recovery procedures, and set the information again by checking the failure information if needed. The different message is displayed when the OS version is 3.1.0-XX or earlier.
33	KAQM13187-E	No settings file that can be used for recovery exists.	There is no setting information file that can be used for the restoration.	Request the system administrator to upload the system setting information file that is the subject to be restored.

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Table 2.8.3-1 Message IDs and Actions to be Taken (6/6)

No.	Message ID	Message	Description	Action
34	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
35	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
36	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
37	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
38	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
39	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
40	KAQM14150-E	An error occurred in the system.	Failed in determining the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.9 Switching the FC Path to Online (fponline)

This command switches the communication status of the FC path from “Offline” to “Online”.

NOTE: This command is not supported in the single node configuration not connected to the disk array subsystem.

2.9.1 Command line

This command uses the following command lines. Select the command line to use depending on the maintenance requirement.

NOTE: Unless otherwise instructed, use this command to switch the specified path to “Online”.

- To switch the specified path to “Online”:
  fponline path-name
- To switch all the FC paths passing through the specified host port to “Online”:
  fponline --hostport host-port-name
- To switch all the FC paths passing through the array port of the specified model to “Online”:
  fponline --arrayport array-port-name --model model --serial serial-number-of-model
- To display the command format on the standard output:
  fponline -h

Table 2.9.1-1 shows the description of each option.

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Table 2.9.1-1 Command Options

No.	Option	Description	Remarks
1	path-name	Specify the target FC path.	Specify it in the following format: pathXXX-YYYY-ZZ XXX : 3-digit number from 000 to 999 YYYY : 4-digit hexadecimal number from 0000 to FFFF (*1) ZZ : Array port name (*1)
2	--hostport host-port-name	Specify the identified host port name on the node side.	Specify it in the following format: fcXXXX XXXX : 4-digit hexadecimal number from 0000 to FFFF (*1)
3	--arrayport array-port-name	Specify the array-port number on the side of disk array subsystem.	Specify 2-digit alphanumeric characters. (*1)
4	--model model	Specify the model of the disk array subsystem where the target array port exists.	Specify the following model: • AMS : DF800S, DF800M, DF800H, DF800ES, DF800EM, or DF800EH • AMS or specified model name: DF800EXS • HUS : DF850XS, DF850S, or DF850MH • USP_V : RAID600 FC • USP_VM : RAID600 RK • VSP : RAID700 • VSP_G1000 : RAID800 • HUS_VM : HM700 • VSP_Gx00 : HM800 (any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850 (any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900)
5	--serial serial-number-of-model	Specify the serial number of the disk array subsystem where the target array port exists.	8-digit number.
6	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

*1: Specify letters in uppercase.

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2.9.2 Execution procedure

This subsection describes the procedure for executing the fponline command.
To switch the specified path to “Online,” refer to 2.9.2 (1) Switching the specified path to “Online”.
To switch all the FC paths passing through the specified host port to “Online”, refer to Maintenance Tool “2.9.2 (2) Switching all the FC paths passing through the specified host port to “Online” (MNTT 02-0620).
To switch all the FC paths passing through the array port of the specified model to “Online”, refer to Maintenance Tool “2.9.2 (3) Switching all the FC paths passing through the array port of the specified model to “Online” (MNTT 02-0640).

(1) Switching the specified path to “Online”

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Check that the status of the target path is “Offline” as shown in Figure 2.9.2-1.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Offline
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Online
```

Figure 2.9.2-1 Execution Example of the fpstatus Command

(c) The enclosed string in Figure 2.9.2-1 above is the name of the path to be switched. Write it down for the next step.
For details about the path name, refer to the option No. 1 in Maintenance Tool “Table 2.9.1-1 Command Options” (MNTT 02-0591).

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(d) Specify the path name written down in the step (c) to the command and execute the fponline command in accordance with Figure 2.9.2-2 “Example of the fponline Command Execution (Switching the Specified Path)”.
When a message ID is displayed, refer to Maintenance Tool “2.9.3 Command termination messages and action to be taken” (MNTT 02-0660).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo fponline path000-0004-0A
```

Figure 2.9.2-2 Execution Example of the fponline Command (Switching the Specified Path)

NOTE: Be careful of uppercase and lowercase letters of a path name.

(e) Execute the fpstatus command as shown in Figure 2.9.2-3 and check that the status of the specified path is switched to “Online”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN      ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a 0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b 1C         50060e801024e8e6  Online
```

Figure 2.9.2-3 Execution Example of the fpstatus Command

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(2) Switching all the FC paths passing through the specified host port to “Online”

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Execute the fpstatus command as shown in Figure 2.9.2-4 and identify the paths that the status is being “Offline”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Offline
```

Figure 2.9.2-4 Execution Example of the fpstatus Command

(c) The enclosed string in Figure 2.9.2-4 above is the name of the target host port. Write it down for the next step. For details about the host port name, refer to the option No. 2 in Maintenance Tool “Table 2.9.1-1 Command Options” (MNTT 02-0591).

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(d) Specify the host port name written down in the step (c) to the command and execute the fponline command in accordance with Figure 2.9.2-5 “Example of the fponline Command Execution (Switching All the FC Paths Passing through the Specified Host Port)”.
When a message ID is displayed, refer to Maintenance Tool “2.9.3 Command termination messages and action to be taken” (MNTT 02-0660).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo fponline --hostport fc0005
```

Figure 2.9.2-5 Execution Example of the fponline Command (Switching All the FC Paths Passing Through the Specified Host Port)

(e) Execute the fpstatus command as shown in Figure 2.9.2-6 and check that the statuses of all FC paths passing through the specified host port are switched to “Online”. For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Online
```

Figure 2.9.2-6 Execution Example of the fpstatus Command

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(3) Switching all the FC paths passing through the array port of the specified model to “Online”

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Execute the fpstatus command as shown in Figure 2.9.2-7 to identify the paths that the status is being “Offline”.
To perform this switching, add “-v” to the fpstatus command option.
Identify the path from the array port, model, and serial number that are enclosed in Figure 2.9.2.7.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus -v
Path              Target   HostPort  HostPortWWN      ArrayPort  ArrayPortWWN     Model  Serial     Status
path000-0004-0A   N0-T000  fc0004    10000000c98db65a 0A         50060e801024e8e0 AMS    85010110   Online
path000-0005-1C   N0-T000  fc0005    10000000c98db65b 1C         50060e801024e8e6 AMS    85010110   Offline
                                                      (1)                         (2)     (3)
```

Figure 2.9.2-7 Execution Example of the fpstatus Command (with -v Option)

(c) The enclosed strings in Figure 2.9.2-7 above are the target array port name, model name, and serial number. Write them down for the next step.
For details about the array port name, the model name, and the form of the serial number, refer to the options No. 3 to 5 in Maintenance Tool “Table 2.9.1-1 Command Options” (MNTT 02-0591).

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(d) Specify the array port name, the model name, and the serial number written down in the step (c) to the command and execute the fponline command in accordance with Figure 2.9.2-8 “Example of the fponline Command Execution (Switching All the FC Paths Passing through the Array Port of the Specified Model)”.
When a message ID is displayed, refer to Maintenance Tool “2.9.3 Command termination messages and action to be taken” (MNTT 02-0660).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo fponline --arrayport 1C --model AMS --serial 85010110
                            (1)        (2)          (3)
```

Figure 2.9.2-8 Execution Example of the fponline Command (Switching All the FC Paths Passing through the Array Port of the Specified Model)

(e) Execute the fpstatus command as shown in Figure 2.9.2-9 and check that the statuses of all FC paths passing through the array port of the specified model are switched to “Online.” For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus -v
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Model  Serial     Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  AMS    85010110   Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  AMS    85010110   Online
```

Figure 2.9.2-9 Execution Example of the fpstatus Command (with -v Option)

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2.9.3 Command termination messages and action to be taken

A message may be displayed when the fponline command is executed. Actions to be taken against messages are described in Table 2.9.3-1 Message IDs and Actions to be Taken.

Table 2.9.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
3	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
4	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
5	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
7	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
8	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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Table 2.9.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
9	KAQM32009-E	An attempt to switch the FC path online has failed. (FC path name = <*FC path name*>)	An error occurred during switching of the FC path to online.	Check the FC cable for connection. If there is nothing wrong with FC cable connection, check the LU status. If the cause of the failure still cannot be identified, execute the "C.2.2 Determination Procedure when a Failure Occurred".
10	KAQM32011-E	The specified FC path does not exist.	The specified FC path does not exist.	Check the specified FC path and execute the command again.
11	KAQM32024-E	An attempt to switch one or more FC paths online has failed.	The FC paths cannot be switched to online because one or more target FC paths are in the "Unknown" status.	Check if the Fibre Channel card is inserted. If the card is inserted, then check if WWN of the FC port on the disk array side is correct. If it is correct, then check the FC cable connection, the FC switch settings, and the disk array settings. If nothing is wrong with them, check if an LU is assigned to the host group corresponding to the FC paths.
12	KAQM32025-E	An attempt to switch one or more FC paths online has failed.	The FC paths cannot be switched to online because one or more target FC paths are in the "Configuration Mismatch" status.	Check if the same LU is assigned to the host groups corresponding to the FC paths which replace with each other.

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Table 2.9.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
13	KAQM32039-E	A system error occurred.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM32043-E	The specified host port does not exist.	The specified host port does not exist.	Check the specified host port name and execute the command again.
15	KAQM32044-E	The specified storage port does not exist.	The specified storage port does not exist.	Check the specified storage port name and execute the command again. The word "storage port" is displayed as "array port" when the OS version is 3.1.0-XX or earlier.
16	KAQM32045-E	An attempt to switch one or more FC paths connected to a host port online has failed. (host port = <*host port*>)	An error occurred during switching of the FC paths to online in units of host ports.	Check the FC cable for connection. If there is nothing wrong with FC cable connection, check the LU status. If the cause of error still cannot be identified, execute the "C.2.2 Determination Procedure when a Failure Occurred".
17	KAQM32046-E	An attempt to switch one or more FC paths connected to an array port online has failed. (model = <*model*>, serial number = <*serial number*>, array port = <*array port*>)	An error occurred during switching of the FC paths to online in units of array port basis.	
18	KAQM32049-E	The specified host port includes one or more FC paths that cannot be switched online.	The specified host port is connected to an unsupported chassis.	Check if the target disk array is supported. If it is supported, then check the FC cable connection, the FC switch settings, and the disk array settings. If there is nothing wrong with them, check the LU status. If the cause of error still cannot be identified, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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2.10 Switching the FC Path to Offline (fpoffline)

This command switches the communication status of the set FC path from “Online” to “Offline”.

NOTE:
- Switching to Offline is available only when the alternate path is normal. Before switching, be sure to check that the path to be switched and the alternate path are both “Online”.
- This command is not supported in the single node configuration not connected to the disk array subsystem.

2.10.1 Command line

This command uses the following command lines. Select the command line to use depending on the maintenance requirement.

NOTE: Unless otherwise instructed, use this command to switch the specified path to “Offline”.

- To switch the specified path to “Offline”:
  fpoffline path-name
- To switch all the FC paths passing through the specified host port to “Offline”:
  fpoffline --hostport host-port-name
- To switch all the FC paths passing through the array port of the specified model to “Offline”:
  fpoffline --arrayport array-port-name --model model --serial serial-number-of-model
- To display the command format on the standard output:
  fpoffline -h

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Table 2.10.1-1 shows the description of each option.

Table 2.10.1-1 Command Options

No.	Option	Description	Remarks
1	path-name	Specify the target FC path.	Specify it in the following format: pathXXX-YYYY-ZZ XXX : 3-digit number from 000 to 999 YYYY : 4-digit hexadecimal number from 0000 to FFFF (*1) ZZ : Array port name (*1)
2	--hostport host-port-name	Specify the identified host port name on the node side.	Specify it in the following format: fcXXXX XXXX : 4-digit hexadecimal number from 0000 to FFFF (*1)
3	--arrayport array-port-name	Specify the array-port number on the side of disk array subsystem.	Specify 2-digit alphanumeric characters. (*1)
4	--model model	Specify the model of the disk array subsystem where the target array port exists.	The model that can be specified is shown below: • AMS : DF800S, DF800M, DF800H, DF800ES, DF800EM, or DF800EH • AMS or specified model name : DF800EXS • HUS : DF850XS, DF850S, or DF850MH • USP_V : RAID600 FC • USP_VM : RAID600 RK • VSP : RAID700 • VSP_G1000 : RAID800 • HUS_VM : HM700 • VSP_Gx00 : HM800 (any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850 (any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900)
5	--serial serial-number-of-model	Specify the serial number of the disk array subsystem where the target array port exists.	8-digit decimal number.
6	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

*1: Specify letters in uppercase.

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2.10.2 Execution procedure

This subsection describes the procedure for executing the fpoffline command.
To switch the specified path to “Offline”, refer to 2.10.2 (1) Switching the specified path to “Offline.
To switch all the FC paths passing through the specified host port to “Offline”, refer to Maintenance Tool “2.10.2 (2) Switching all the FC paths passing through the specified host port to “Offline” (MNTT 02-0730).
To switch all the FC paths passing through the array port of the specified model to “Offline”, refer to Maintenance Tool “2.10.2 (3) Switching all the FC paths passing through the array port of the specified model to “Offline” (MNTT 02-0750).
Unless otherwise instructed, use this command to switch the specified path to “Offline.”

(1) Switching the specified path to “Offline”

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200.)

(b) Execute the fpstatus command as shown in Figure 2.10.2-1 to identify the paths that the status is being “Online”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Online
```

Figure 2.10.2-1 Execution Example of the fpstatus Command

(c) The enclosed string in Figure 2.10.2-1 above is the name of the path to be switched. Write it down for the next step. For details about the form of the path name, refer to the option No. 1 in Maintenance Tool “Table 2.10.1-1 Command Options” (MNTT 02-0700).

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(d) Specify the path name written down in the step (c) to the command and execute the fpoffline command in accordance with Figure 2.10.2-2 “Example of the fpoffline Command Execution (Switching the Specified Path)”.
When a message ID is displayed, refer to Maintenance Tool “2.10.3 Command termination messages and action to be taken” (MNTT 02-0770).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo fpoffline path000-0004-0A
```

Figure 2.10.2-2 Execution Example of the fpoffline Command (Switching the Specified Path)

NOTE: Be careful of uppercase and lowercase letters of a path name.

(e) Execute the fpstatus command in accordance with Figure 2.10.2-3 and check that the status of the specified path is switched to “Offline”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN      ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a 0A         50060e801024e8e0  Offline
path000-0005-1C   N0-T000   fc0005    10000000c98db65b 1C         50060e801024e8e6  Online
```

Figure 2.10.2-3 Execution Example of the fpstatus Command

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(2) Switching all the FC paths passing through the specified host port to “Offline”

NOTE: Check that the status of all the FC paths to be switched is “Online”.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Execute the fpstatus command as shown in Figure 2.10.2-4 to identify the path that the status is being “Online”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Online
```

Figure 2.10.2-4 Execution Example of the fpstatus Command

(c) The enclosed string in Figure 2.10.2-4 above is the name of the target host port. Write it down for the next step. For details about the form of the host port name, refer to the option No. 2 in Maintenance Tool “Table 2.10.1-1 Command Options” (MNTT 02-0700).

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(d) Specify the host port name written down in the step (c) to the command and execute the fpoffline command in accordance with Figure 2.10.2-5 “Example of the fpoffline Command Execution (Switching All the FC Paths Passing through the Specified Host Port)”.
When a message ID is displayed, refer to Maintenance Tool “2.10.3 Command termination messages and action to be taken” (MNTT 02-0770).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo fpoffline --hostport fc0005
```

Figure 2.10.2-5 Execution Example of the fpoffline Command (Switching All the FC Paths Passing Through the Specified Host Port)

(e) Execute the fpstatus command as shown in Figure 2.10.2-6 and check that the statuses of all the FC paths passing through the specified host port are switched to “Offline”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Offline
```

Figure 2.10.2-6 Execution Example of the fpstatus Command

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(3) Switching all the FC paths passing through the array port of the specified model to “Offline”

NOTE: Check that the status of all the FC paths to be switched is “Online”.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Execute the fpstatus command as shown in Figure 2.10.2-7 to identify the paths that the status is being “Online”.
To perform this switching, add “-v” to the fpstatus command option.
Identify the path from the array port, model, and serial number that are enclosed in Figure 2.10.2.7.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus -v
Path              Target    HostPort  HostPortWWN      ArrayPort  ArrayPortWWN     Model  Serial     Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a 0A         50060e801024e8e0 AMS    85010110   Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b 1C         50060e801024e8e6 AMS    85010110   Online
                                                       (1)                        (2)     (3)
```

Figure 2.10.2-7 Execution Example of the fpstatus Command (with -v Option)

(c) The enclosed strings in Figure 2.10.2-7 above are the target array port name, model name, and serial number. Write them down for the next step.
For details about the form of array port name, model name, and serial number, refer to the options No. 3 to 5 in Maintenance Tool “Table 2.10.1-1 Command Options” (MNTT 02-0700).

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(d) Specify the array port name, model name, and serial number written down in the step (c) to the command and execute the fpoffline command in accordance with Figure 2.10.2-8 “Example of the fpoffline Command Execution (Switching All the FC Paths Passing through the Array Port of the Specified Model)”.
When a message ID is displayed, refer to Maintenance Tool “2.10.3 Command termination messages and action to be taken” (MNTT 02-0770).

```
$ sudo fponline --arrayport 1C --model AMS --serial 85010110
                            (1)        (2)        (3)
```

Figure 2.10.2-8 Execution Example of the fpoffline Command (Switching All the FC Paths Passing Through the Array Port of the Specified Model)

(e) Execute the fpstatus command as shown in Figure 2.10.2-9 and check that the statuses of all FC paths passing through the array port of the specified model are switched to “Offline”.
For details about the fpstatus command, refer to Maintenance Tool “2.5 Displaying the FC Status (fpstatus)” (MNTT 02-0280).

```
$ sudo fpstatus -v
Path              Target    HostPort  HostPortWWN       ArrayPort  ArrayPortWWN      Status
path000-0004-0A   N0-T000   fc0004    10000000c98db65a  0A         50060e801024e8e0  Online
path000-0005-1C   N0-T000   fc0005    10000000c98db65b  1C         50060e801024e8e6  Offline
```

Figure 2.10.2-9 Execution Example of the fpstatus Command (with -v Option)

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2.10.3 Command termination messages and action to be taken

A message may be displayed when the fpoffline command is executed. Actions to be taken against messages are described in Table 2.10.3-1 Message IDs and Actions to be Taken.

Table 2.10.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
3	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
4	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
5	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
7	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
8	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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Table 2.10.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
9	KAQM32010-E	An attempt to switch the FC path offline has failed. (FC path name = <*FC path name*>)	An error occurred during switching of the FC path to offline.	Check the FC cable for connection. If there is nothing wrong with FC cable connection, check the LU status. If the cause of error still cannot be identified, execute the "C.2.2 Determination Procedure when a Failure Occurred".
10	KAQM32011-E	The specified FC path does not exist.	The specified FC path does not exist.	Check the specified FC path and execute the command again.
11	KAQM32014-E	An attempt to switch the FC path offline has failed.	Switching to offline failed because no alternate FC path exists.	Check the FC path status. For the checking method, refer to Maintenance Tool "2.5 Displaying the FC Status (fpstatus)" (MNTT 02-0280). When the alternate FC path is not online, recover it to online and then execute the command again. If the alternate FC path does not exist, set the FC path.
12	KAQM32026-E	An attempt to switch one or more FC paths offline has failed.	The FC paths cannot be switched to offline because one or more target FC paths are in the "Unknown" status.	Check if the Fibre Channel card is inserted. If the card is inserted, then check if WWN of the FC port on the disk array side is correct. If it is correct, then check the FC cable connection, the FC switch settings, and the disk array settings. If there is nothing wrong with them, check if an LU is assigned to the host group corresponding to the FC paths.
13	KAQM32027-E	An attempt to switch one or more FC paths offline has failed.	The FC paths cannot be switched to offline because one or more target FC paths are in the "Configuration Mismatch" status.	Check if the same LU is assigned to the host groups corresponding to the FC paths which alternate with each other.

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Table 2.10.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
14	KAQM32039-E	A system error occurred.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
15	KAQM32043-E	The specified host port does not exist.	The specified host port does not exist.	Check the specified host port name and execute the command again.
16	KAQM32044-E	The specified storage port does not exist.	The specified storage port does not exist.	Check the specified storage port name and execute the command again. The word "storage port" is displayed as "array port" when the OS version is 3.1.0-XX or earlier.
17	KAQM32047-E	An attempt to switch one or more FC paths connected to a host port offline has failed. (host port = <host port>)	An error occurred during switching of the FC paths to offline in units of host port basis.	Check the FC cable for connection. If there is nothing wrong with FC cable connection, check the LU status. If the cause of error still cannot be identified, execute the "C.2.2 Determination Procedure when a Failure Occurred".
18	KAQM32048-E	An attempt to switch one or more FC paths connected to an array port offline has failed. (model = <*model*>, serial number = <*serial number*>, array port = <*array port*>)	An error occurred during switching of the FC paths to offline in units of array port basis.	
19	KAQM32050-E	The specified host port includes one or more FC paths that cannot be switched offline.	The specified host port is connected to an unsupported chassis.	Check if the target disk array is supported. If it is supported, then check the FC cable connection, the FC switch settings, and the disk array settings. If there is nothing wrong with them, check the LU status. If the cause of error still cannot be identified, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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2.11 Displaying the Management Port Information (mngiflist)

This command displays the management port interface information. When a cluster is configured, information of both nodes is displayed.

2.11.1 Command line

This command uses the following command lines.

- To display a list of interface information of the IPv4 and IPv6 addresses:
  mngiflist
- To display a list of interface information of the IPv4 address:
  mngiflist -p v4
- To display a list of interface information of the IPv6 address:
  mngiflist -p v6
- To display the command format on the standard output:
  mngiflist -h

Table 2.11.1-1 shows the description of each option.

Table 2.11.1-1 Command Options

No.	Option	Description	Remarks
1	Omit	Displays IPv4 and IPv6 interface information. If the IPv6 interface is not set, only the IPv4 interface is displayed.	—
2	-p v4	Specify in case IPv4 interface information is set. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).	—
3	-p v6	Specify in case IPv6 interface information is set. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).	—
4	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.11.2 Output format

The output format for the mngiflist command execution is shown in Figure 2.11.2-1 “Output Format of the mngiflist Command”.

```
Output format of mngiflist (In the cluster configuration)

Interface              :  [interface]
[node(Host name)]
[IPv4]
Fixed IP addr          :  [fixedIP1]
Netmask                :  [netmask1]
[IPv6]
 Fixed IP addr         :  [v6fixedIP1]
 Prefix length         :  [prefixlen1]
[node(Host name)]
[IPv4]
Fixed IP addr          :  [fixedIP2]
Netmask                :  [netmask2]
[IPv6]
 Fixed IP addr         :  [v6fixedIP2]
 Prefix length         :  [prefixlen2]
MTU                    :  [mtu]

Output format of mngiflist (In the single node configuration)

Interface              :  [interface]
[IPv4]
IP address             :  [IPaddress]
Netmask                :  [netmask]
[IPv6]
IP address             :  [v6IPaddress]
Prefix length          :  [prefixlen]
MTU                    :  [mtu]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.11.2-1 Output Format of the mngiflist Command

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Table 2.11.2-1 describes the details about the items in Figure 2.11.2-1 “Output Format of the mngiflist Command”.

Table 2.11.2-1 Description of the Items in the Output Format (1/2)

No.	Item	Description	Remarks
1	[interface]	Dsiplays the interface name. Displays as fixed mng0. Displays mng0 (DHCP) in case that the DHCP setting of the management port is enabled.	—
2	[node(Host name)]	Displays the unit name of the login node and the corresponding host name.	This is not displayed when the cluster is not configured or in the single node configuration.
3	[IPv4] (*1)	Setting title of the IPv4 address.	—
4	[In the cluster configuration] [fixedIP1] [In the single node configuration] [IPaddress]	Displays the fixed IP address of the item No. 2 (A local node in the case of single node configuration). If no IP address can be displayed, the following status is displayed depending on the status. • Invalid (None): Displayed when no value can be acquired.	—
5	[In the cluster configuration] [netmask1] [In the single node configuration] [netmask]	Displays the netmask of the item No. 2 (A local node in the case of single node configuration). If no netmask can be displayed, the following status is displayed depending on the status. • Invalid (None): Displayed when no value can be acquired.	—
6	[IPv6] (*1)	Setting title of the IPv6 address.	Not displayed if no IPv6 address is set.
7	(*1) [In the cluster configuration] [v6fixedIP1] [In the single node configuration] [v6IPaddress]	Displays the IPv6 address set for item No. 2 (A local node in the case of single node configuration). If no IPv6 address can be displayed, the following status is displayed depending on the status. • Invalid (None): Displayed when no value can be acquired.	The square bracket “[]” of the IPv6 address specified at the time of setting is removed and the address is displayed. Not displayed if no IPv6 address is set.
8	(*1) [In the cluster configuration] [prefixlen1] [In the single node configuration] [prefixlen]	Displays the prefix length set for item No. 2 (A local node in the case of single node configuration). If no prefix length can be displayed, the following status is displayed depending on the status. • Invalid (None): Displayed when no value can be acquired.	Not displayed if no IPv6 address is set.

*1: This item is displayed if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

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Table 2.11.2-1 Description of the Items in the Output Format (2/2)

No.	Item	Description	Remarks
9	[node(Host name)]	Displays the unit name of the other side node and the corresponding host name.	This is not displayed when the cluster is not configured or in the single node configuration.
10	[IPv4] (*1)	Setting title of the IPv4 address	Not displayed when the cluster is not configured or in the single node configuration.
11	[fixedIP2]	Displays the fixed IP address of the item No. 9. Displays the following status depending on the status. • Invalid (None): Displayed when no value can be acquired. • Unknown: Displayed when no information can be acquired. • Invalid ([invalid value]): Displayed when the value is invalid.	This is not displayed when the cluster is not configured or in the single node configuration.
12	[netmask2]	Displays the netmask of the item No. 9. Displays the following status depending on the status. • Invalid (None): Displayed when no value can be acquired. • Unknown: Displayed when no information can be acquired. • Invalid ([invalid value]): Displayed when the value is invalid.	This is not displayed when the cluster is not configured or in the single node configuration.
13	[IPv6] (*1)	Setting title of the IPv6 address	Not displayed when the cluster is not configured, in the single node configuration, or if no IPv6 address is set.
14	[v6fixedIP2] (*1)	Displays the IPv6 address set for item No. 9. If no IPv6 address can be displayed, the following status is displayed depending on the status. • Invalid (None): Displayed when no value can be acquired. • Unknown: Displayed when no information can be acquired. • Invalid ([invalid value]): Displayed when the value is invalid.	Not displayed when the cluster is not configured, in the single node configuration, or if no IPv6 address is set.
15	[v6prefixlen2] (*1)	Displays the prefix length set for item No. 9. If no prefix length can be displayed, the following status is displayed depending on the status. • Invalid (None): Displayed when no value can be acquired. • Unknown: Displayed when no information can be acquired. • Invalid ([invalid value]): Displayed when the value is invalid.	Not displayed when the cluster is not configured, in the single node configuration, or if no IPv6 address is set.
16	[mtu]	Displays the MTU value. When the value is different between the execution node and the other side node, the following status is displayed. • Invalid ([MTU value of the execution node], [MTU value of the other side node]) The MTU values of the above status are displayed as “Unknown” if the information cannot be acquired for both this side and the other side nodes, and as “None” when values cannot be acquired.	In the single node configuration, it acquires and shows the value of local node only. When the information cannot be acquired, it is displayed as “Unknown”. When the value cannot be acquired, it is displayed as “Invalid(None)”.

*1: This item is displayed if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

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2.11.3 Execution procedure

This subsection describes the procedure for executing the mngiflist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) An execution example of mngiflist command when the OS version is earlier than 3.1.0-XX (in the state of clustering) is shown in Figure 2.11.3-1, an execution example when the OS version is 3.1.0-XX or later (in the state of clustering) is shown in Figure 2.11.3-2.
An execution example of mngiflist command when the OS version is earlier than 3.1.0-XX (in the state of not clustering) is shown in Figure 2.11.3-3, an execution example of when the OS version is 3.1.0-XX or later (in the state of not clustering) is shown in Figure 2.11.3-4.
An execution example of mngiflist command when the OS version is earlier than 3.1.0-XX (in the case of single node configuration) is shown in Figure 2.11.3-5, an execution example of when the OS version is 3.1.0-XX or later (in the case of single node configuration) is shown in Figure 2.11.3-6.
In the state of not clustering, execute the mngiflist command in the both node to confirm the setting contents, because the information of the other side node cannot be acquired.
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.11.4 Command termination messages and action to be taken" (MNTT 02-0830).
Perform a propter action and execute the command again.

- In the cluster configuration

```
$ sudo mngiflist

Interface              :  mng0
node 0(DFBQLNBX)
Fixed IP addr          :  192.168.0.20
Netmask                :  255.255.255.0
node 1(DGBQLNBX)
Fixed IP addr          :  192.168.0.21
Netmask                :  255.255.255.0
MTU                    :  1500
```

Figure 2.11.3-1 Execution Example of the mngiflist Command (when the OS version is earlier than 3.1.0-XX)

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```
$ sudo mngiflist

Interface                  :  mng0

node 0(DFBQLNBX)
[IPv4]
 Fixed IP addr             :  192.168.0.20
 Netmask                   :  255.255.255.0
[IPv6]
 Fixed IP addr             :  2001:2c0:418:1::1
 Prefix length             :  64

node 1(DGBQLNBX)
[IPv4]
 Fixed IP addr             :  192.168.0.21
 Netmask                   :  255.255.255.0
[IPv6]
 Fixed IP addr             :  2001:2c0:418:1::2
 Prefix length             :  64
MTU                        :  1500
```

Figure 2.11.3-2 Execution Example of the mngiflist Command (when the OS version is 3.1.0-XX or later and IPv6 address is set)

- When the cluster is not configured

```
$ sudo mngiflist

Interface                  :  mng0

 Fixed IP addr             :  192.168.0.20
 Netmask                   :  255.255.255.0
MTU                        :  1500
```

Figure 2.11.3-3 Execution Example of the mngiflist Command (when the OS version is earlier than 3.1.0-XX)

```
$ sudo mngiflist

Interface                  :  mng0

[IPv4]
 Fixed IP addr             :  192.168.0.20
 Netmask                   :  255.255.255.0
MTU                        :  1500
```

Figure 2.11.3-4 Execution Example of the mngiflist Command (when the OS version is 3.1.0-XX or later and IPv6 address is not set)

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- In the case of single node configuration

```
$ sudo mngiflist

Interface          :  mng0
IP address         :  192.168.0.20
Netmask            :  255.255.255.0
MTU                :  1500
```

Figure 2.11.3-5 Execution Example of the mngiflist Command (when the OS version is earlier than 3.1.0-XX)

```
$ sudo mngiflist

Interface          :   mng0
[IPv4]
IP address         :  192.168.0.20
Netmask            :  255.255.255.0
[IPv6]
IP address         :  2001:2c0:418:1::2
Prefix length      :  64
MTU                :  1500
```

Figure 2.11.3-6 Execution Example of the mngiflist Command (when the OS version is 3.1.0-XX or later)

```
$ sudo mngiflist
Interface          : mng0(DHCP)
[IPv4]
IP address         : 10.208.136.74
Netmask            : 255.255.255.0
MTU                : 1500

$
```

Figure 2.11.3-7 Execution Example of the mngiflist Command (DHCP setting of the management port is enabled)

NOTE: If the displayed settings are wrong, specify the settings again. For details, refer to Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840).

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2.11.4 Command termination messages and action to be taken

A message may be displayed when the mngiflist command is executed. Actions to be taken against messages are shown in Table 2.11.4-1 Message IDs and Actions to be Taken.

Table 2.11.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
5	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM05010-E	An internal error occurred.	An internal error occurred.	
7	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	

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2.12 Setting the Management Port Information (ownmngifedit)

This command sets the management port interface for this side node.

NOTE:
- Basically, the information setting of Management port is executed before clustering. The setting modification after clustering must be done only when there is a request from the system administrator.
- In the case IPv4 address is set in the cluster configuration (the BMC and Management SW connection configuration) and if a different network segment than the BMC IP address is set, information acquisition from the OS via BMC fails, causing the SIM message (KAQK37508-W or KAQK37510-W) to display. If the operation is continued with the different network segment, problems occur such as a failure to get the information of the other side node, or a failure that the failover cannot be done when a trouble occurs.
  Therefore, be sure to confirm the IP address of BMC when you change the IP address of Management port, and need to change the setting to have the same network segment when it is set in the different network segment.
  For the confirmation of BMC IP address, refer to Maintenance Tool "2.18 Setting BMC LAN Information (bmcctl)" (MNTT 02-1210).
- In the BMC direct connection configuration, network segment of management port IP address and BMC IP address must be different. If operation is continued with the two IP addresses having the same network segment, problems occur such as a failure to get the information of the other side node, or a failure that the failover cannot be done when a trouble occurs.
  Therefore, be sure to confirm the BMC IP address when you change the management port IP address.
  For the confirmation of BMC IP address, refer to Maintenance Tool "2.18 Setting BMC LAN Information (bmcctl)" (MNTT 02-1210).
- If you change the network segment of management port, be sure to execute bmcctl command even when BMC IP address has been set properly.
  For setting BMC IP address, refer to Maintenance Tool "2.18 Setting BMC LAN Information (bmcctl)" (MNTT 02-1210).
- In case that the DHCP setting of the management port is enabled, an address cannot be set in this command.

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2.12.1 Command line

This command uses the following command lines.

- To set the interface of the IPv4 address (in the cluster configuration):
  ownmngifedit [-p v4] -a fixed_ip -n netmask

- To set the interface of the IPv4 address (In the single node configuration):
  ownmngifedit [-p v4] -a ip_address -n netmask

- To set the interface of the IPv6 address (in the cluster configuration) (3.2.0-XX or earlier):
  ownmngifedit -p v6 -a fixed_ip -n netmask

- To set the interface of the IPv6 address (In the single node configuration) (3.2.0-XX or earlier):
  ownmngifedit -p v6 -a ip_address -n netmask

- To set the interface of the IPv6 address (in the cluster configuration) (3.2.1-XX or later):
  ownmngifedit [-p v6] -a fixed_ip -n netmask

- To set the interface of the IPv6 address (In the single node configuration) (3.2.1-XX or later):
  ownmngifedit [-p v6] -a ip_address -n netmask

- To display the command format on the standard output:
  ownmngifedit -h

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Table 2.12.1-1 shows the description of each option.

Table 2.12.1-1 Command Options

No.	Option	Description	Remarks
1	-p v4	Specify in case the IPv4 interface is set. This option can be omitted. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	—
2	-p v6	Specify in case the IPv6 interface is set. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	This option must be specified in case IPv6 is set when the OS version is 3.2.0-XX or earlier. This option can be omitted when the OS version is 3.2.1-XX or later.
3	[In the cluster configuration] -a <*fixed_ip*> [In the single node configuration] -a <*ip_address*>	Specify a fixed IP address information to be set for the management port interface. If the IPv6 format is specified, display the IP address in a square bracket.	IPv6 setting example [2001:c03:1022:1::1]
4	-n netmask	Specify a netmask (prefix length if the IPv6 is specified).	The prefix length can be specified within the range from 0 to 128.
5	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.12.2 Execution procedure

This subsection describes the procedure for executing the ownmngifedit command.

NOTE:
- In case the IPv4 address is set in the cluster configuration (the BMC and Management SW connection configuration) and if an IP address of a different network segment is specified, change the BMC IP address after execution of this command to make the network segment of the BMC IP address the same as the specified IP address. For details about changing the BMC IP address, refer to Maintenance Tool "2.18 Setting BMC LAN Information (bmcctl)" (MNTT 02-1210).
- In the cluster configuration, when the network segment (prefix length if the IPv6 is specified) is changed, change the settings so that the network segment of the other side node becomes the same.
- In case the IPv4 address is set in the cluster configuration (the BMC and Management SW connection configuration), if a different network segment (prefix length if the IPv6 is specified) than the BMC IP address is set, information acquisition from the OS via BMC fails, causing the SIM message (KAQK37508-W or KAQK37510-W) to display.
- If the network segment (prefix length if the IPv6 is specified) is changed, the routing information specified for the relevant interface is deleted. Add the routing information again after the change. For details about adding the routing information, refer to Maintenance Tool "2.16 Adding the Management Port Routing Information (mngrouteadd)" (MNTT 02-1000).

(1) Check that the cable is connected between the management port and SW

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) In case IPv4 is set, execute the ownmngifedit command in accordance with Figure 2.12.2-1 "Example of the ownmngifedit Command Execution (in case IPv4 is set)". In case IPv6 is set, execute the ownmngifedit command in accordance with Figure 2.12.2-2 "Example of the ownmngifedit Command Execution (in case IPv6 is set)". However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
If this command is executed when the cluster is in operation, a message to forcibly stop the cluster (KAQM05160-Q (It is KAQM0517-Q in the single node configuration.)). Enter "y" to continue the operation. The cluster on both nodes is stopped forcibly (It is the resource group of local node in the single node configuration). This is canceled when "n" is entered.

```
$ sudo ownmngifedit -a 192.168.0.20 -n 255.255.255.0
```

Figure 2.12.2-1 Execution Example of the ownmngifedit Command (in case IPv4 is set)

```
$ sudo ownmngifedit -p v6 -a [3f2:121:1111::1] -n 64
```

Figure 2.12.2-2 Execution Example of the ownmngifedit Command (in case IPv6 is set)

When a message ID is displayed, refer to Maintenance Tool "2.12.3 Command termination messages and action to be taken" (MNTT 02-0860).
Perform a propter action and execute the command again.

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(4) After completion of setting, check the settings with the mngiflist command.
For details about the mngiflist command, refer to Maintenance Tool “2.11 Displaying the Management Port Information (mngiflist)” (MNTT 02-800).

(5) In the cluster configuration, check the state of the cluster to confirm the cluster status is “INACTIVE”, the node statuses of the both nodes are “INACTIVE”, and the resource group is “Offline/No error” in case the Physical node is operated, and then report the system administrator that the cluster start-up and the resource group start-up can be done.
For details, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

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2.12.3 Command termination messages and action to be taken

A message may be displayed when the ownmngifedit command is executed. Actions to be taken against messages are described in Table 2.12.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.12.3-1 Message IDs and Actions to be Taken (1/4)

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM05034-E	The specified IP address cannot be used because it is already in use. (IP address = <*IP address*>)	The specified IP address is already used.	Specify another IP address and execute the command again.
3	KAQM05036-E	The network identified by the specified IP address and netmask cannot be used because it is already in use. (network address = <*network address*>)	The network identified by the specified IP address and netmask is already used.	Check the interface settings in the cluster. Specify another IP address or netmask and execute the command again.
4	KAQM05048-E	An attempt to access the cluster management LU has failed.	Failed to access the cluster management LU.	Execute the "C.2.2 Determination Procedure when a Failure Occurred".
5	KAQM05051-E	An attempt to restart the network has failed.	Failed to reboot the network.	Check if the OS of the node in the cluster is stopped and if a network error has occurred. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.12.3-1 Message IDs and Actions to be Taken (2/4)

No.	Message ID	Message	Description	Action
6	KAQM05053-E	An attempt to set network information has failed.	Failed to set the network information.	Check that the resource group is offline and then execute the command again. For the checking method, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). Check if the specified data affects the network settings of the management LAN. If so, correct the data specification. Check if the OS in the cluster is stopped and if a network failure has occurred. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
7	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	Collect the OS log. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM05056-E	An attempt to write to the file to be used for the requested processing has failed.	Failed to write the file to be used for the requested processing.	
9	KAQM05115-E	The format of the specified IP address is invalid. (IP address = <*IP address*>)	The format of the specified IP address is invalid.	Use the correct IP address format.

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Table 2.12.3-1 Message IDs and Actions to be Taken (3/4)

No.	Message ID	Message	Description	Action
10	KAQM05030-E	In the cluster, nodes that cannot synchronize exist.	An unsynchronized node exists in the cluster.	Check the following: 1. Check if the interface or routing settings affect the network setting of the management port. For the checking method, refer to the mngiflist command (Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800)) and the mngroutelist command (Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960)). 2. Check if the OS of either node in the cluster is stopped. For the checking method, refer to the clstatus command (Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040)). 3. Verify the status of each port with the hwstatus command, "B.3.1 Displaying the Hardware Status (hwstatus)" to check if a network failure has occurred. If the error occurs again, there may be trouble with connection to the NIS server, DNS server, or LDAP server. Request the system administrator to cancel the settings of each server and then execute the command again. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
11	KAQM05160-Q	If the cluster and resource groups are running, they will be forcibly stopped. This will cause the services to stop, as well. Are you sure you want to change the management port interface? (y/n)	If the cluster and resource groups are running, the service will be terminated because they will be forcibly stopped. Are you sure you want to change the management port interface?	To change the management port, enter "y". To cancel it, enter "n".
12	KAQM05170-Q	If you execute this operation, the services stop temporarily. Are you sure you want to change the management port interface? (y/n)	If this operation is executed, the service is stopped temporarily. Are you sure you want to change the management port interface?	To change the management port, enter "y". To cancel it, enter "n".
13	KAQM05194-E	The entered prefix length is invalid.	An error exists in the entered Prefix length.	Specify a number within the range from 0 to 128 and reexecute.

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Table 2.12.3-1 Message IDs and Actions to be Taken (4/4)

No.	Message ID	Message	Description	Action
14	KAQM05211-E	The protocol version of the specified IP addresses and netmask (prefix length) do not match.	The protocol version of the specified IP address or netmask (prefix length) is not unified.	Check the specified data and unify the protocol version of the data.
15	KAQM05239-E	The specified IP address cannot be set because it is already in use on the same interface. (IP address = <*IP address*>)	The specified IP address cannot be set as it has already been used on the same interface within the cluster.	Confirm the configuration of the interface and the specified IP address. If an error is still displayed even if non used IP address is specified and executed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
16	KAQM05246-E	Because DHCP setting becomes effective as for the appointed interface, I cannot operate it.	The specified interface cannot be operated as the DHCP setting is enabled.	Ask the system administrator to disable the DHCP setting of the management port. Execute again after the completion of the setting change.
17	KAQM05247-E	Because a change of the DHCP setting is not reflected as for the appointed interface, I cannot operate it.	The specified interface cannot be operated as the change of the DHCP setting is not reflected.	Execute again after reflecting the DHCP setting.
18	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
19	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
20	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
21	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
22	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
23	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
24	KAQM14174-E	The specified IP address cannot be set.(specified value = <*specified value*>)	The specified IP address is a special address that cannot be set.	Confirm the specified value and execute again.

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2.13 Displaying the Management Port Negotiation Mode (mngnegmodeget)

This command displays the management port negotiation mode.

2.13.1 Command line

This command uses the following command lines.

- To display the negotiation mode:
  mngnegmodeget

- To display the command format on the standard output:
  mngnegmodeget -h

Table 2.13.1-1 shows the description of each option.

Table 2.13.1-1 Command Options

No.	Option	Description	Remarks
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.13.2 Output format

The output format for the mngnegmodeget command execution is shown in Figure 2.13.2-1 “Output Format of the mngnegmodeget Command”.

```
Output format of mngiflist
Mode      :  [mode]
Speed     :  [speed]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.13.2-1 Output Format of the mngnegmodeget Command

Table 2.13.2-1 describes the details about the items Figure 2.13.2-1 “Output Format of the mngnegmodeget Command”.

Table 2.13.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[mode]	Displays the management port negotiation mode. (OS version is 4.1.0-01 or earlier) • Auto • 100Base Half Duplex • 100Base Full Duplex • 1000Base Full Duplex (OS version is 4.1.0-02 or later) • Auto • 100Base Half Duplex • 100Base Full Duplex • 100Base Half Duplex(Auto Negotiation) • 100Base Full Duplex(Auto Negotiation) • 1000Base Full Duplex(Auto Negotiation)
2	[speed]	Displays the management port link speed. • 100Mb/s • 1000Mb/s • 10Gb/s

2.13.3 Execution procedure

This subsection describes the procedure for executing the mngnegmodeget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) An execution example of the mngnegmodeget command execution is shown in Figure 2.13.3-1.
When a message ID is displayed, refer to Maintenance Tool “2.13.4 Command termination messages and action to be taken” (MNTT 02-0920).
Perform a propter action and execute the command again.

```
$ sudo mngnegmodeget
Mode      :  Auto
Speed     :  1000Mb/s
```

Figure 2.13.3-1 Execution Example of the mngnegmodeget Command

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2.13.4 Command termination messages and action to be taken

A message may be displayed when the mngnegmodeget command is executed. Actions to be taken against messages are described in Table 2.13.4-1 Message IDs and Actions to be Taken.

Table 2.13.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
4	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM05078-E	The negotiation mode could not be acquired. (network port name = <*network port name*>)	Failed to acquire the negotiation mode.	Check if a hardware failure has occurred. If no error has occurred, execute the command again. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
6	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.14 Setting the Management Port Negotiation Mode (mngnegmodeset)

This command sets a negotiation mode for the management port.

NOTE: Do not use this command to set the management port negotiation mode unless otherwise instructed to do so.

2.14.1 Command line

This command uses the following command lines.

- To set the negotiation mode:

  (OS version is 4.1.0-01 or earlier)
  mngnegmodeset -m {auto|1000bfull|100bfull|100bhalf}

  (OS version is 4.1.0-02 or later)
  mngnegmodeset -m {auto|1000bfull|100bfull|100bhalf|100bfullauto|100bhalfauto}

- To display the command format on the standard output:
  mngnegmodeset -h

Table 2.14.1-1 shows the description of each option.

Table 2.14.1-1 Command Options

No.	Option	Description	Remarks
1	-m auto | 1000bfull | 100bfull | 100bhalf | 100bfullauto | 100bhalfauto	Specify a negotiation mode. (OS version is 3.2.2-XX or earlier) auto :Auto (Auto Negotiation=On) 1000bfull :1000Base full Duplex (Auto Negotiation=On) 100bfull :100Base full Duplex (Auto Negotiation=On) 100bhalf :100Base Half Duplex (Auto Negotiation=On) (OS version is 3.2.3-XX or later, and 4.1.0-01 or earlier) auto :Auto (Auto Negotiation=On) 1000bfull :1000Base full Duplex (Auto Negotiation=On) 100bfull :100Base full Duplex (Auto Negotiation=Off) 100bhalf :100Base Half Duplex (Auto Negotiation=Off) (OS version is 4.1.0-02 or later) auto :Auto (Auto Negotiation=On) 1000bfull :1000Base full Duplex (Auto Negotiation=On) 100bfull :100Base full Duplex (Auto Negotiation=Off) 100bhalf :100Base Half Duplex (Auto Negotiation=Off) 100bfullauto :100Base full Duplex (Auto Negotiation=On) 100bhalfauto :100Base Half Duplex (Auto Negotiation=On)	“Auto Negotiation=On” is specified when enabling the auto negotiation as well as communicating at the specified speed and duplex. “Auto Negotiation=Off” is specified when disabling the auto negotiation as well as communicating at the specified speed and duplex. The Management port of 10GbE can only set “auto”. Specify “auto” in the -m option.
2	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.14.2 Execution procedure

This subsection describes the procedure for executing the mngnegmodeset command.

(1) Check that the cable is connected between the management port and SW.

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Execute the mngnegmodeset command in accordance with Figure 2.14.2-1 "Example of the mngnegmodeset Command Execution".
When a message ID is displayed, refer to Maintenance Tool "2.14.3 Command termination messages and action to be taken" (MNTT 02-0950).
Perform a propter action and execute the command again.

```
$ sudo mngnegmodeset -m auto
```

Figure 2.14.2-1 Execution Example of the mngnegmodeset Command

(4) After completion of setting, check the settings with the mngnegmodeget command. For details about the mngnegmodeget command, refer to Maintenance Tool "2.13 Displaying the Management Port Negotiation Mode (mngnegmodeget)" (MNTT 02-0900).

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2.14.3 Command termination messages and action to be taken

A message may be displayed when the mngnegmodeset command is executed. Actions to be taken against messages are described in Table 2.14.3-1 Message IDs and Actions to be Taken.

Table 2.14.3-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
4	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
5	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM05010-E	An internal error occurred.	An internal error occurred.	
7	KAQM05077-E	The specified negotiation mode could not be set. (network port name =<*network port name*>)	The specified negotiation mode could not be set.	Check if a hardware failure has occurred. If no error has occurred, execute the command again. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
8	KAQM05327-E	The specified negotiation mode cannot be set for the management port.	The specified negotiation mode cannot be set for the management port.	Refer to Maintenance Tool "2.14.1 Command line" (MNTT 02-0930) to confirm the command line.

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2.15 Displaying the Management Port Routing Information (mngroutelist)

This command displays the routing information of the management port interface.

2.15.1 Command line

This command uses the following command lines.

- To display the routing information of the IPv4 and IPv6 addresses:
  mngroutelist
- To display the routing information of the IPv4 address:
  mngroutelist –p v4
- To display the routing information of the IPv6 address:
  mngroutelist –p v6
- To display the command format on the standard output:
  mngroutelist -h

Table 2.15.1-1 shows the description of each option.

Table 2.15.1-1 Command Options

No.	Option	Description	Remarks
1	-p v4	Specify in case IPv4 interface information is set. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	—
2	-p v6	Specify in case IPv4 interface information is set. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	—
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.15.2 Output format

The output format for the mngroutelist command execution is shown in Figure 2.15.2-1 Output Format of the mngroutelist Command.

```
Output format of mngroutelist

[IPv4]
Target        Netmask       Gateway      Method     Type     MSS    Iface
[target1]     [netmask1]    [gateway1]   [method1]  [type1]  [mss1] [iface1]
[IPv6]
Target                Gateway             Method    Type    Iface
[v6target1]           [v6gateway1]        [method1] [type1] [iface1]

*1: Values acquired from the system are displayed within [  ].
*2: The routing information is displayed on a single line on an interface basis.
```

Figure 2.15.2-1 Output Format of the mngroutelist Command

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Table 2.15.2-1 describes the details about the items in Figure 2.15.2-1 Output Format of the mngroutelist Command.

Table 2.15.2-1 Description of the Items in the Output Format

No.	Item	Description	Remarks
IPv4 Displaying Items			
1	[IPv4] (*1)	Routing title of the IPv4. Displays in case IPv4 routing information exists.	—
2	[target1]	Displays the destination of the management port routing. Displays the IP address, host name, or network name of the destination.	Displayed in two lines if exceeding 15 characters.
3	[netmask1]	Displays the netmask of the management port routing.	—
4	[gateway1]	Displays the gateway connected through the management port. Displays the IP address or host name of the gateway.	Displayed in two lines if exceeding 15 characters.
5	[method1]	Displays whether the route is allowed or rejected for the management port routing. “Allow”: The route is allowed. “Reject”: The route is rejected.	—
6	[type1]	Displays the specification method for the destination of the management port routing. “net”: “net” is specified to add the target routing. “host”: “host” is specified to add the target routing. “default”: “default” is specified to add the target routing.	—
7	[mss1]	Displays the maximum segment size for the TCP connection of the management port route. If the target route is rejected or if MSS is default, “-” is displayed.	—
8	[iface1]	Displays the management port interface name “mng0.” If it is the routing information assigned by DHCP, “mng0 (DHCP)” is displayed.	—
IPv6 Displaying Items			
9	[IPv6] (*1)	Routing title of the IPv6. Displayed in case IPv6 routing information exists.	—
10	[v6target1] (*1)	Displays the target address prefix of routing of the management port (the IPv6 address and the prefix length combined by “/”). Ex) ffcc::0/64 The default gateway is displayed as “default”.	The square bracket “[]” of the IPv6 address specified at the time of setting is removed and the address is displayed. Displayed in two lines if exceeding 23 characters.
11	[v6gateway1] (*1)	Displays the gateway passing the management port. Displays the gateway IP address. If this is omitted from routing setting, “-” is displayed.	
12	[method1] (*1)	Same as item No. 5.	—
13	[type1] (*1)	Same as item No. 6.	Top alignment in case of two-line display.
14	[iface1] (*1)	Same as item No. 8.	Top alignment in case of two-line display.

*1: This item is displayed if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

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2.15.3 Execution procedure

This subsection describes the procedure for executing the mngroutelist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) An execution example of the mngroutelist command execution when the OS version is earlier than 3.1.0-XX is shown in Figure 2.15.3-1, an execution example when the OS version is 3.1.0-XX or later is shown in Figure 2.15.3-2, and Figure 2.15.3-3 shows an execution example of the case only the IPv4 address is displayed..
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.15.4 Command termination messages and action to be taken" (MNTT 02-0990).
Perform a propter action and execute the command again.

```
$ sudo mngroutelist
Target          Netmask         Gateway         Method   Type     MSS   Iface
192.168.20.0    255.255.255.0   192.168.10.1    Allow    net      -     mng0
default         0.0.0.0         192.168.10.1    Allow    default  -     mng0
```

Figure 2.15.3-1 Execution Example of the mngroutelist Command (when the OS version is earlier than 3.1.0-XX)

```
$ sudo mngroutelist
IPv4
Target          Netmask         Gateway         Method   Type     MSS   Iface
192.168.20.0    255.255.255.0   192.168.10.1    Allow    net      -     mng0
default         0.0.0.0         192.168.10.1    Allow    default  -     mng0
IPv6
Target                      Gateway                     Method   Type   Iface
fd00:2111:1111:1111:111     fd00:2111:1111:1111:111     Allow    net    mng0
1:2222:1111:1111/64         1:2222:1111:2
default                     fd00::1                     Allow    net    mng0
```

Figure 2.15.3-2 Execution Example of the mngroutelist Command (when the OS version is 3.1.0-XX or later)

```
$ sudo mngroutelist –p v4
IPv4
Target          Netmask         Gateway         Method   Type     MSS   Iface
192.168.20.0    255.255.255.0   192.168.10.1    Allow    net      -     mng0
default         0.0.0.0         192.168.10.1    Allow    default  -     mng0
```

Figure 2.15.3-3 Execution Example of the mngroutelist Command (when the OS version is 3.1.0-XX or later and the v4 option is specified)

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2.15.4 Command termination messages and action to be taken

A message may be displayed when the mngroutelist command is executed. Actions to be taken against messages are described in Table 2.15.4-1 Message IDs and Actions to be Taken.

Table 2.15.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
5	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM05010-E	An internal error occurred.	An internal error occurred.	
7	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	

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2.16 Adding the Management Port Routing Information (mngrouteadd)

This command adds the routing information of the management port interface.

NOTE: This command cannot change the routing information. To change the routing information, add and delete routing information. For details about deleting the routing information, refer to Maintenance Tool "2.17 Deleting the Management Port Routing Information (mngroutedel)" (MNTT 02-1100).

2.16.1 Command line

This command uses the following command lines. Select the command line to use depending on the maintenance requirement.

- In case of the IPv4 address, to specify the destination of the routing to be added with an IP address (net):
  mngrouteadd [-p v4] -t net -d target -n netmask [-g gateway|--reject] [-m mss]

- In case of the IPv4 address, to specify the destination of the routing to be added with a host name or an IP address (host):
  mngrouteadd [-p v4] -t host -d target [-g gateway|--reject] [-m mss]

- In case of the IPv4 address, to specify the destination of the routing to be added with the default route (default):
  mngrouteadd [-p v4] -t default {-g gateway|--reject} [-m mss]

- In case of the IPv6 address, to specify the destination of the routing to be added with an IP address (net) (3.2.0-XX or earlier):
  mngrouteadd -p v6 -t net -d target -n netmask [-g gateway|--reject]

- In case of the IPv6 address, to specify the destination of the routing to be added with a host name or an IP address (host) (3.2.0-XX or earlier):
  mngrouteadd -p v6 -t host -d target [-g gateway|--reject]

- In case of the IPv6 address, to specify the destination of the routing to be added with the default route (default) (3.2.0-XX or earlier):
  mngrouteadd -p v6 -t default {-g gateway|--reject}

- In case of the IPv6 address, to specify the destination of the routing to be added with an IP address (net) (3.2.1-XX or later):
  mngrouteadd [-p v6] -t net -d target -n netmask [-g gateway|--reject]

- In case of the IPv6 address, to specify the destination of the routing to be added with a host name or an IP address (host) (3.2.1-XX or later):
  mngrouteadd [-p v6] -t host -d target [-g gateway|--reject]

- In case of the IPv6 address, to specify the destination of the routing to be added with the default route (default) (3.2.1-XX or later):
  mngrouteadd [-p v6] -t default {-g gateway|--reject}

- To display the command format on the standard output:
  mngrouteadd -h

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Table 2.16.1-1 describes the options of the command.

Table 2.16.1-1 Command Options

No.	Option	Description	Remarks
1	-p v4	Specify in case IPv4 routing is added. This option can be omitted. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	—
2	-p v6	Specify in case IPv6 added is set. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	This option must be specified in case IPv6 is set when the OS version is 3.2.0-XX or earlier. This option can be omitted when the OS version is 3.2.1-XX or later.
3	-t {net|host|default}	Select a specification method for the routing destination.	Specify any of the following: net: Specify an IP address. host: Specify a host name or an IP address. default: Set the default route. When "default" is selected, the option No. 4 or No. 5 must be specified.
4	-d <*target*>	Specify the routing destination according to the format selected with "-t" option (an IP address when "net" is specified, or a host name or an IP address when "host" is selected). This option is required only when "net" or "host" is selected for the option No. 3. In case the IPv6 format is set, display the IP address in a square bracket ("[]").	IPv6 setting example [2001:c03:1022:1::1]
5	-n <*netmask*>	Specify the netmask (prefix length if the IPv6 is specified). This option is required only when "net" is selected for the option No. 3.	The prefix length can be specified within the range from 0 to 128.
6	[-g <*gateway*>]	Specify the IP address or host name of the gateway to pass through. In case the IPv6 format is set, display the IP address in a square bracket ("[]"). The link local unicast address can be specified in case IPv6 is set.	This cannot be selected when the option No. 7 is specified.
7	[--reject]	Specify this to reject routing to the specified destination.	This cannot be selected when the option No. 6 is specified.
8	[-m <*mss*>]	Specify this to set the maximum segment size for the TCP connection of the route. (unit: bytes) If the first digit is 0, it results in an error.	Specify the size in the range of 64 to 65536. Can be specified only in case of IPv4.
9	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.16.2 Execution procedure

This subsection describes the procedure for executing the mngrouteadd command.
To specify the routing destination with an IP address (net), refer to 2.16.2 (1) Specifying the destination of the routing to be added with an IP address (net).
To specify the destination of the routing setting target with a host name or an IP address (host), refer to Maintenance Tool "2.16.2 (2) Specifying the destination of the routing to be added with a host name or an IP address (host)" (MNTT 02-1030).
To specify the destination of the routing setting target with the default route (default), refer to Maintenance Tool "2.16.2 (3) Specifying the destination of the routing to be added with the default route (default)" (MNTT 02-1040).

(1) Specifying the destination of the routing to be added with an IP address (net)

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the mngrouteadd command using the routing information for the management port IPv4 address specified by the client as the option in accordance with Figure 2.16.2-1 "Example of the mngrouteadd Command Execution".
If routing to the IPv6 address is set, with the routing information to the customer-specified Management port IPv6 address as an option according to the mngrouteadd execution example shown in Figure 2.16.2-2, execute the mngrouteadd command. However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.16.3 Command termination messages and action to be taken" (MNTT 02-1050).
Perform a propter action and execute the command again.

```
$ sudo mngrouteadd -t net -d 192.168.20.0 -n 255.255.255.0 -g 192.168.10.1
```

Figure 2.16.2-1 Execution Example of the mngrouteadd Command (in case IPv4 is specified)

```
$ sudo mngrouteadd -p v6 -t net -d [2001:c09:418:111::1] -n 64 -g [fd00::4]
```

Figure 2.16.2-2 Execution Example of the mngrouteadd Command (in case IPv6 is specified)

(c) After completion of setting, check the settings with the mngroutelist command. For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

(d) Ask the system administrator to check the system access.

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(2) Specifying the destination of the routing to be added with a host name or an IP address (host)

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) For performing the routing setting for the IPv4 address, execute the mngrouteadd command in accordance with Figure 2.16.2-3 "Example of the mngrouteadd Command Execution".
For performing the routing setting for the IPv6 address, execute the mngrouteadd command in accordance with Figure 2.16.2-4 "Example of the mngrouteadd Command Execution". However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.16.3 Command termination messages and action to be taken" (MNTT 02-1050).
Perform a propter action and execute the command again.

```
$ sudo mngrouteadd -t host -d host01 -g 192.168.10.1
```

Figure 2.16.2-3 Execution Example of the mngrouteadd Command (in case IPv4 is specified)

```
$ sudo mngrouteadd -p v6 -t host -d host02 -g [fd00::4]
```

Figure 2.16.2-4 Execution Example of the mngrouteadd Command (in case IPv6 is specified)

(c) After completion of setting, check the setting information with the mngroutelist command. For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

(d) Request the system administrator to check the system access.

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(3) Specifying the destination of the routing to be added with the default route (default)

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) For performing the routing setting for the IPv4 address, execute the mngrouteadd command in accordance with Figure 2.16.2-5 "Example of the mngrouteadd Command Execution".
For performing the routing setting for the IPv6 address, execute the mngrouteadd command in accordance with Figure 2.16.2-6 "Example of the mngrouteadd Command Execution". However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.16.3 Command termination messages and action to be taken" (MNTT 02-1050).
Perform a propter action and execute the command again.

```
$ sudo mngrouteadd -t default –g 192.168.10.1
```

Figure 2.16.2-5 Execution Example of the mngrouteadd Command (in case IPv4 is specified)

```
$ sudo mngrouteadd -p v6 -t default –g [fd00::4]
```

Figure 2.16.2-6 Execution Example of the mngrouteadd Command (in case IPv6 is specified)

(c) After completion of setting, check the setting information with the mngroutelist command. For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

(d) Request the system administrator to check the system access.

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2.16.3 Command termination messages and action to be taken

A message may be displayed when the mngrouteadd command is executed. Actions to be taken against messages are described in Table 2.16.3-1 Message IDs and Actions to be Taken.

Table 2.16.3-1 Message IDs and Actions to be Taken (1/5)

No.	Message ID	Message	Description	Action
1	KAQM05001-E	A syntax error exists in the entered <*item name*>.	The entered content for the target or gateway is invalid.	Specify the IP address format and execute the command again.
2	KAQM05002-E	A syntax error exists in the entered <*item name*>.	The entered content is invalid.	The displayed content is wrong. Enter the correct content and execute the command again.
3	KAQM05006-E	A syntax error exists in the entered MSS.	The entered content for MSS is invalid.	Enter a numerical value from 64 to 65536.
4	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM05019-E	The specified gateway is not in the network.	The specified gateway does not exist in the network.	Specify a gateway of the same network.
6	KAQM05020-E	An attempt to set routing information failed.	Failed to set the routing information.	Check the entered data. Reenter the correct data and execute the command again. If the error occurs again, request the system administrator to check the routing information to be set.

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Table 2.16.3-1 Message IDs and Actions to be Taken (2/5)

No.	Message ID	Message	Description	Action
7	KAQM05028-E	The specified routing entry already exists.	The specified routing settings already exist.	Request the system administrator to check the settings for routing in the cluster. Check if the same settings already exist and if the settings are synchronized within the cluster. If the same settings exist within the cluster, enter different routing settings. If unsynchronized settings exist within the cluster, delete the settings and execute the command again. For details about deleting the routing, request the system administrator or refer to Maintenance Tool "2.17 Deleting the Management Port Routing Information (mngroutedel)" (MNTT 02-1100).
8	KAQM05029-E	An attempt to set routing information failed.	Failed to set the routing information.	Check the entered data. Reenter the correct data and execute the command again. If the error occurs again, request the system administrator to check the routing information to be set.

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Table 2.16.3-1 Message IDs and Actions to be Taken (3/5)

No.	Message ID	Message	Description	Action
9	KAQM05030-E	In the cluster, nodes that cannot synchronize exist.	An unsynchronized node exists in the cluster.	Check the following: 1. Check if the interface or routing settings affect the network settings of the management port. For the checking method, refer to the mngiflist command (Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800)) and the mngroutelist command (Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960)). 2. Check if the OS of either node in the cluster is stopped. For the checking method, refer to the clstatus command (Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040)). 3. Verify the status of each port with the hwstatus command, "B.3.1 Displaying the Hardware Status (hwstatus)" to check if a network failure has occurred. If the error occurs again, there may be trouble with connection to the NIS server, DNS server, or LDAP server. Request the system administrator to cancel the settings of each server and then execute the command again. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.16.3-1 Message IDs and Actions to be Taken (4/5)

No.	Message ID	Message	Description	Action
10	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
11	KAQM05056-E	An attempt to write to the file to be used for the requested processing has failed.	Failed to write the file to be used for the requested processing.	
12	KAQM05064-E	The number of routing information registrations has reached the maximum.	The number of routing information registrations has reached the maximum.	Delete unnecessary routing information and execute the command again. For details about deleting the routing, refer to Maintenance Tool "2.17 Deleting the Management Port Routing Information (mngroutedel)" (MNTT 02-1100).
13	KAQM05115-E	The format of the specified IP address is invalid. (IP address = <*IP address*>)	The format of the specified IP address is invalid.	Use the correct IP address format.
14	KAQM05116-E	The format of the specified host name or IP address is invalid. (host name or IP address = <*host name or IP address*>)	The format of the specified host name or IP address is invalid.	Use alphanumeric characters, period (.), and hyphen (-) (the first must be an alphabet and the last must by an alphanumeric character) or the IP address format.
15	KAQM05155-W	Setting of the routing information ended normally on the processing node, but failed on the other node.	Failed to set the routing information of the other side node.	Check if the LAN cable is connected, if the load of the node within the cluster returns to the normal status, and if the OS is operating in the other node of the cluster. Then execute setting on the other node in the cluster again. For the node checking method, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).
16	KAQM05177-E	The specified routing entry already exists.	The specified target is the same as that of a route that is used by the system.	Check whether target IP address and netmask specified are correct. If correct, request the System Administrator to do as follows. In the routing settings in the node, check whether a route with the specified target already exists and whether the routing settings in the cluster have been synchronized. Use the routelist -l command to check the routes that are used by the system. If the target you specified already exists in the routing settings, specify the target of a different route. If the routing settings in the cluster have not yet been synchronized, delete the routes, and then add routes again.
17	KAQM05187-E	Routing information cannot be added because an interface of the specified protocol version is not set.	The interface of the specified protocol version is not set.	Set the interface of the specified protocol version and reexecute.
18	KAQM05194-E	The entered prefix length is invalid.	An error exists in the entered Prefix length.	Specify a number within the range from 0 to 128 and reexecute.

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Table 2.16.3-1 Message IDs and Actions to be Taken (5/5)

No.	Message ID	Message	Description	Action
19	KAQM05199-E	The maximum segment size cannot be set for IPv6 address routing.	The maximum segment size cannot be set for the IPv6 address routing.	Because the “-m” option cannot be specified in case of IPv6, cancel the specification and reexecute.
20	KAQM05211-E	The protocol version of the specified IP addresses and netmask (prefix length) do not match.	The protocol version of the specified IP address or netmask (prefix length) is not unified.	Check the specified data and unify the protocol version of the data.
21	KAQM05247-E	Because a change of the DHCP setting is not reflected as for the appointed interface, I cannot operate it.	The specified interface cannot be operated as the change of the DHCP setting is not reflected.	Execute again after reflecting the DHCP setting.
22	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
23	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
24	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
25	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
26	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
27	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
28	KAQM14174-E	The specified IP address cannot be set. (specified value = <*specified value*>)	The specified IP address is a special address that cannot be set.	Confirm the specified value and execute.

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2.17 Deleting the Management Port Routing Information (mngroutedel)

This command deletes the routing information of the management port interface.

NOTE:
- This command cannot change the routing information. To change the routing information, add and delete routing information. For details about adding the routing information, refer to Maintenance Tool "2.16 Adding the Management Port Routing Information (mngrouteadd)" (MNTT 02-1000).
- The routing information assigned by the DHCP server cannot be deleted.

2.17.1 Command line

This command uses the following command lines. The command line to be used depends on [Type] of the routing information to be deleted.

- In case of the IPv4 address, to specify the destination of the routing to be deleted with an IP address ([Type] is net):
  mngroutedel [-p v4] -d net-address -n netmask [-g gateway] [-f] [--nochk]

- In case of the IPv4 address, to specify the destination of the routing to be deleted with a host name or an IP address ([Type] is host):
  mngroutedel [-p v4] -d host-address [-g gateway] [-f] [--nochk]

- In case of the IPv4 address, to specify the destination of the routing to be deleted with the default route ([Type] is default):
  mngroutedel [-p v4] -d default [-g gateway] [-f] [--nochk]

- In case of the IPv6 address, to specify the destination of the routing deletion target with an IP address ([Type] is net) (3.2.0-XX or earlier):
  mngroutedel -p v6 -d net-address -n netmask [-g gateway] [-f] [--nochk]

- In case of the IPv6 address, to specify the destination of the routing deletion target with a host name or an IP address ([Type] is host) (3.2.0-XX or earlier):
  mngroutedel -p v6 -d host-address [-g gateway] [-f] [--nochk]

- In case of the IPv6 address, to specify the destination of the routing deletion target with the default route ([Type] is default) (3.2.0-XX or earlier):
  mngroutedel -p v6 -d default [-g gateway] [-f] [--nochk]

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- In case of the IPv6 address, to specify the destination of the routing deletion target with an IP address ([Type] is net) (3.2.1-XX or later):
  mngroutedel [-p v6] -d net-address -n netmask [-g gateway] [-f] [--nochk]

- In case of the IPv6 address, to specify the destination of the routing deletion target with a host name or an IP address ([Type] is host) (3.2.1-XX or later):
  mngroutedel [-p v6] -d host-address [-g gateway] [-f] [--nochk]

- In case of the IPv6 address, to specify the destination of the routing deletion target with the default route ([Type] is default) (3.2.1-XX or later):
  mngroutedel [-p v6] -d default [-g gateway] [-f] [--nochk]

- To display the command format on the standard output:
  mngroutedel -h

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Table 2.17.1-1 shows the description of each option.

Table 2.17.1-1 Command Options

No.	Option	Description	Remarks
1	-p v4	Specify in the case of deleting the IPv4 routing. This option can be omitted. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	—
2	-p v6	Specify in the case of deleting the IPv6 routing. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060)..	This option must be specified in case IPv6 is set when the OS version is 3.2.0-XX or earlier. This option can be omitted when the OS version is 3.2.1-XX or later.
3	-d { net-address |host-address|default}	Specify the target of the routing to be deleted. If the IPv6 format is specified, display the IP address in a square bracket "[]".	Specify any of the following: net-address: Specify an IP address. host-address: Specify an IP address or a host name. default: Specify this to delete the default route. IPv6 setting example [2001:c03:1022:1::1] If the gateway is set, the option shown in the item number 5 in this list is mandatory.
4	-n <*netmask*>	Specify the netmask (prefix length if the IPv6 is specified) of the routing to be deleted. This option is required only when "net" is selected for the "-t" option to add the routing information. The prefix length, if [Target] of the routing list shows "cd00:111::1/64", indicates "64" after "/".	Check if the routing to be deleted is "net" by referring to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).
5	-g <*gateway*>	Specify the gateway of the routing to be deleted. If the gateway is set, specification is required. If the IPv6 format is specified, display the IP address in a square bracket "[]".	—
6	-f	Specify this to inhibit the output of the confirmation message.	Do not specify these options for command execution unless instructed to do so.
7	--nochk	Specify this to execute delete processing even if the interfaces file does not contain the routing to be deleted.	
8	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.17.2 Execution procedure

This subsection describes the procedure for executing the mngroutedel command.
To specify the destination of the routing to be deleted with an IP address, refer to 2.17.2 (1) Specifying the destination of the routing to be deleted with an IP address.
To specify the destination of the routing to be deleted with a host name or an IP address, refer to Maintenance Tool "2.17.2 (2) Specifying the destination of the routing to be deleted with a host name or an IP address" (MNTT 02-1140).
To specify the destination of the routing to be deleted with the default route, refer to Maintenance Tool "2.17.2 (3) Specifying the destination of the routing to be deleted with the default route" (MNTT 02-1160).

(1) Specifying the destination of the routing to be deleted with an IP address

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the mngroutelist command to check that there is the routing information to be deleted. When specifying the routing to be deleted with an IP address, check that [Type] of the routing is [net].
For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

(c) Write down the routing information to be deleted.

(d) For deleting routing information in the IPv4 format, enter the information written down in the step (c) as command options and execute the mngroutedel command in accordance with Figure 2.17.2-1.
For deleting routing information in the IPv6 format, enter the information written down in the step (c) as command options and execute the mngroutedel command in accordance with Figure 2.17.2-2.
However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.17.3 Command termination messages and action to be taken" (MNTT 02-1180).
Perform a propter action and execute the command again.

```
$ sudo mngroutedel -d 192.168.20.0 -n 255.255.255.0 -g 192.168.10.1
```

Figure 2.17.2-1 Execution Example of the mngroutedel Command (IPv4 format)

```
$ sudo mngroutedel -p v6 -d [2001:2c9:418:11::1] -n 64 -g [fd00::4]
```

Figure 2.17.2-2 Execution Example of the mngroutedel Command (IPv6 format)

NOTE: Be careful not to delete different routing information by mistake.

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(e) When the step (d) is executed, a confirmation message is displayed as shown in Figure 2.17.2-3 "Confirmation Message (KAQM05099-Q) for the mngroutedel Command Execution." Enter "y" to start execution. The routing deletion processing starts.
To cancel the execution, enter "n".
The same message is displayed both in case of IPv4 and in case of IPv6.
When a message ID is displayed, refer to Maintenance Tool "2.17.3 Command termination messages and action to be taken" (MNTT 02-1180).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo mngroutedel -d 192.168.20.0 -n 255.255.255.0 -g 192.168.10.1
KAQM05099-Q Do you want to delete the specified routing information? (y/n) y
```

Figure 2.17.2-3 Confirmation Message (KAQM05099-Q) for the mngroutedel Command Execution

NOTE: When this command is executed with the "-f" option, routing deletion is performed without displaying the confirmation message. Do not specify the "-f" option in this command unless otherwise instructed to do so.

(f) After completion of deletion, execute the mngroutelist command to check that the specified routing information is deleted.
For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

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(2) Specifying the destination of the routing to be deleted with a host name or an IP address

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the mngroutelist command to check that there is the routing information to be deleted. When specifying the routing to be deleted with a host name, check that [Type] of the routing is [host].
For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

(c) Write down the routing information to be deleted.

(d) For deleting routing information in the IPv4 format, enter the information written down in the step (c) as command options and execute the mngroutedel command in accordance with Figure 2.17.2-4.
For deleting routing information in the IPv6 format, enter the information written down in the step (c) as command options and execute the mngroutedel command in accordance with Figure 2.17.2-5.
However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.17.3 Command termination messages and action to be taken" (MNTT 02-1180).
Perform a propter action and execute the command again.

```
$ sudo mngroutedel -d host01 -g 192.168.10.1
```

Figure 2.17.2-4 Execution Example of the mngroutedel Command (IPv4 format)

```
$ sudo mngroutedel -p v6 -d host02 -g [fd00::4]
```

Figure 2.17.2-5 Execution Example of the mngroutedel Command (IPv6 format)

NOTE: Be careful not to delete different routing information by mistake.

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(e) When the step (d) is executed, a confirmation message is displayed as shown in Figure 2.17.2-6 "Confirmation Message (KAQM05099-Q) for the mngroutedel Command Execution." Enter "y" to start execution. The routing deletion processing starts.
To cancel the execution, enter "n".
The same message is displayed both in case of IPv4 and in case of IPv6.
When a message ID is displayed, refer to Maintenance Tool "2.17.3 Command termination messages and action to be taken" (MNTT 02-1180).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo mngroutedel -d host01 -g 192.168.10.1
KAQM05099-Q Do you want to delete the specified routing information? (y/n) y
```

Figure 2.17.2-6 Confirmation Message (KAQM05099-Q) for the mngroutedel Command Execution

NOTE: When this command is executed with the "-f" option, routing deletion is performed without displaying the confirmation message. Do not specify the "-f" option in this command unless otherwise instructed to do so.

(f) After completion of deletion, execute the mngroutelist command to check that the specified routing information is deleted. For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

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(3) Specifying the destination of the routing to be deleted with the default route

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the mngroutelist command to check that there is the routing information to be deleted. When specifying the routing to be deleted with the default route, check that [Type] of the routing is [default].
For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

(c) Write down the routing information to be deleted.

(d) For deleting routing information in the IPv4 format, enter the information written down in the step (c) as command options and execute the mngroutedel command in accordance with Figure 2.17.2-7.
For deleting routing information in the IPv6 format, enter the information written down in the step (c) as command options and execute the mngroutedel command in accordance with Figure 2.17.2-8.
However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.17.3 Command termination messages and action to be taken" (MNTT 02-1180).
Perform a propter action and execute the command again.

```
$ sudo mngroutedel -d default -g 192.168.10.1
```

Figure 2.17.2-7 Execution Example of the mngroutedel Command (IPv4 format)

```
$ sudo mngroutedel -p v6 -d default -g [fd00::4]
```

Figure 2.17.2-8 Execution Example of the mngroutedel Command (IPv6 format)

NOTE: Be careful not to delete different routing information by mistake.

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(e) When the step (d) is executed, a confirmation message is displayed as shown in Figure 2.17.2-9 "Confirmation Message (KAQM05099-Q) for the mngroutedel Command Execution." Enter "y" to start execution. The routing deletion processing starts.
To cancel the execution, enter "n".
The same message is displayed both in the case of IPv4 and IPv6.
When a message ID is displayed, refer to Maintenance Tool "2.17.3 Command termination messages and action to be taken" (MNTT 02-1180).
Perform a proper action and repeat the procedure from the step (b).

```
$ sudo mngroutedel -d default -g 192.168.10.1
KAQM05099-Q Do you want to delete the specified routing information? (y/n) y
```

Figure 2.17.2-9 Confirmation Message (KAQM05099-Q) for the mngroutedel Command Execution

NOTE: When this command is executed with the "-f" option, routing deletion is performed without displaying the confirmation message. Do not specify the "-f" option in this command unless instructed to do so.

(f) After completion of the deletion, execute the mngroutelist command to check that the specified routing information is deleted.
For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).

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2.17.3 Command termination messages and action to be taken

A message may be displayed when the mngroutedel command is executed. Actions to be taken against messages are described in Table 2.17.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.17.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM05002-E	A syntax error exists in the entered <*item name*>.	The entered content is invalid.	The displayed content is wrong. Enter the correct content and execute the command again.
2	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM05029-E	An attempt to set routing information failed.	Failed to set the routing information.	Check the entered data. Reenter the correct data and execute the command again. If the error occurs again, collect the OS log. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM05056-E	An attempt to write to the file to be used for the requested processing has failed.	Failed to write the file to be used for the requested processing.	
6	KAQM05095-E	The specified routing entry does not exist.	The specified routing settings do not exist.	Check the current routing information with the mngroutelist command and specify the valid routing information. For details about the mngroutelist command, refer to Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960).
7	KAQM05099-Q	Do you want to delete the specified routing information? (y/n)	Do you want to delete the specified routing information? (y/n)	Enter "y" to delete the routing information. Enter "n" to cancel.

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Table 2.17.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
8	KAQM05104-E	An attempt to delete the routing information has failed. (routing information = <*routing-information*>).	Failed to delete the routing information. (Failed routing information)	Request the system administrator to check the routing information to be deleted.
9	KAQM05116-E	The format of the specified host name or IP address is invalid. (host name or IP address=<*host name or IP address*>)	The format of the specified host name or IP address is invalid.	Use alphanumeric characters, period (.), and hyphen (-) (the first must be an alphabet and the last must by an alphanumeric character) or the IP address format.
10	KAQM05155-W	Setting of the routing information ended normally on the processing node, but failed on the other node.	Failed to set the routing information of the other side node.	Check if the LAN cable is connected, if the load of the node within the cluster returns to the normal status, and if the OS is operating in the other node of the cluster. Then execute setting on the other node in the cluster again. For the node checking method, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).
11	KAQM05194-E	The entered prefix length is invalid.	An error exists in the entered Prefix length.	Specify a number within the range from 0 to 128 and execute.
12	KAQM05211-E	The protocol version of the specified IP addresses and netmask (prefix length) do not match.	The protocol version of the specified IP address or netmask (prefix length) is not unified.	Check the specified data and unify the protocol version of the data.
13	KAQM05247-E	Because a change of the DHCP setting is not reflected as for the appointed interface, I cannot operate it.	The specified interface cannot be operated as the change of the DHCP setting is not reflected.	Execute again after reflecting the DHCP setting.
14	KAQM05276-E	Routing information cannot be deleted because the routing is set by DHCP server.	The routing information cannot be deleted as this routing was set by the DHCP server.	For the routing information set by the DHCP server, operate from the DHCP server.

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Table 2.17.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
15	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
16	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
17	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
18	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
19	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
20	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
21	KAQM14174-E	The specified IP address cannot be set. (specified value = <*specified value*>)	The specified IP address is a special address that cannot be set.	Confirm the specified value and execute again.

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2.18 Setting BMC LAN Information (bmcctl)

The command displays the list of the interface setting and the interface information of the BMC port.

NOTE:
- To change the IP address of a BMC after the system operation has started, use this command.
- System administrators usually set BMC ports. However, maintenance personnel can set BMC LAN ports when they are instructed to do so in the manual or requested to do so by system administrators.
- In the cluster configuration (the BMC and Management SW connection configuration), if a different network segment than the IP address of management port is set, information acquisition from the OS via BMC fails, causing the SIM message (KAQK37508-W) to display. If the operation is continued with the different network segment, problems occur such as a failure to get the information of the other side node, or a failure that the failover cannot be done when a trouble occurs.
  Therefore, be sure to confirm the IP address of Management port when you change the BMC IP address, and need to change the setting to have the same network segment when it is set in the different network segment.
- In the single node configuration, set the IP address to be the same network segment with the IP address of the Private Maintenance port.
- Only IPv4 can be set for the BMC IP address. No IPv6 address can be set.
- In the BMC direct connection configuration, if operation is continued with BMC IP address and Management port IP address having the same network segment, problems occur such as a failure to get the information of the other side node, or a failure that the failover cannot be done when a trouble occurs.
  Therefore, when you change the BMC IP address, confirm the management port IP address and if the network segment of two IP addresses are same, change the setting so that they have different network segments.
- In the case of D51B-2U, if the settings are displayed immediately after setting or changing the BMC port interface, 0.0.0.0 might be displayed instead of displaying the setting address. In this case, run the displayed command again after a while.

2.18.1 Command line

This command uses the following command lines.

- To set a BMC port interface (In the cluster configuration):
  bmcctl -a {fixed_ip1[:[fixed_ip2]] | [fixed_ip1]:fixed_ip2} -n netmask [-g gateway]

- To set a BMC port interface (In the single node configuration):
  bmcctl -a ip_address [-g gateway]

- To display the BMC port interface information:
  bmcctl

- To set the BMC account:
  bmcctl --account

- To display the command format on the standard output:
  bmcctl –h

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Table 2.18.1-1 shows the description of each option.

Table 2.18.1-1 Description of the Options (1/2)

No.	Option	Description	Remark
1	[In the cluster configuration] -a {fixed_ip1[:[fixed_ip2]] | [fixed_ip1]:fixed_ip2} [In the single node configuration] -a ip_address	Specify the IP addresses of the BMCs. fixed_ip1: Specify the IP address of the BMC in the clustered node where you enter the bmcctl command. fixed_ip2: Specify the IP address of the BMC in the clustered node where you do not enter the bmcctl command. ip_address: Specify the IP address information of local node in the single node configuration.	• You can omit part of the option as follows. For the omitted part, the preset value is used. -a fixed_ip1: or -a fixed_ip1 -a :fixed_ip2 • The IP addresses to be specified must exist in the same network. • The same IP address cannot be specified twice. • If fixed_ip2 is specified before a cluster is created, the command results in an error. • In the cluster configuration, the Management port and the BMC port in the same node must belong to the same network segment. • In the single node configuration (the BMC and Management SW connection configuration), be sure to set the Private Maintenance port and BMC port to be the same network segment. • The different network segment cannot be specified if you change just one side of IP address.

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Table 2.18.1-1 Description of the Options (2/2)

No.	Option	Description	Remark
2	-n netmask	Specify the netmask. The specified value is used as the netmask for the IP addresses specified in the -a option.	• In the cluster configuration, when you change the netmask, the BMC LAN ports move from the network segment containing the Management ports. In this case, you need to reset the network segment for the Management ports so the BMC LAN ports and the Maintenance ports belong to the same network segment. For details about how to set a Management port, refer to Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840). • In the BMC and Management SW connection configuration, the network segment different from the management port cannot be specified after clustering. • In the single node configuration, this is available to specify in the OS version 3.2.1-03 or later. However, if you omit this option, the behavior differs depending on whether the IP address information for BMC is set or not. If you set this option, the value is maintained. If not, the netmask is specified automatically with the same one of Private Maintenance port. • In the single node configuration, this is not available to specify in the OS version 3.2.1-02 or earlier. The netmask is specified automatically with the same one of Private Maintenance port.
3	-g gateway	Specify the IP address of the default gateway. To delete the default gateway setting, specify a blank character enclosed between two double quotation marks ("") for gateway.	Unless otherwise special instruction, this option should not be set.
4	--account	Sets the BMC account.	Unless otherwise special instruction, this option should not be set.
5	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.18.2 Execution procedure

This subsection describes the procedure for executing the bmcctl command.
If you want to set a BMC port interface, refer to 2.18.2 (1) Setting a BMC port interface.
If you want to list the BMC port interface settings, refer to Maintenance Tool "2.18.2 (2) Displaying the BMC port interface information" (MNTT 02-1240).
To set the BMC account, refer to Maintenance Tool "(3) Setting BMC account" (MNTT 02-1261).

(1) Configuring a BMC port

NOTE:
- In the cluster configuration (the BMC and Management SW connection configuration), specify the IP address of a BMC LAN port so that it belongs to the same network segment containing the IP address of the Management port in the same node.
- In the cluster configuration (with the BMC direct connection configuration), specify the BMC port IP address of which the network segment is different from the management port IP address.
- In the cluster configuration (the BMC and Management SW connection configuration), if you specify the IP address of a BMC LAN port in a network segment that differs from the one containing the IP address of the Management port, the OS will fail to collect information via the BMC and a SIM message (KAQK37508-W) will be output.
- In the cluster configuration, when you change the network segment for a BMC LAN port, change the network segment for the BMC LAN port in the other side node so both network segments are the same.
- In the cluster configuration, specify a network segment for a BMC LAN port that differs from the ones containing the Heartbeat port, Private Maintenance port, and Data port.
- In the cluster configuration, the default gateway is set when the HFSM server is located in the different network segment from the Management port. Therefore, specify it when the setting of default gateway is instructed by the system administrator. Unless otherwise instructed, the specification of the default gateway does not necessary.
- In the cluster configuration (with the BMC direct connection configuration), if you change the network segment of the management port IP address, be sure to execute bmcctl command even when the BMC IP address has been set properly.

(a) Check the cables connected to BMC port and the destination by referring to Table 2.18.2-1.

Table 2.18.2-1 Destination of BMC port by Differences of Configuration

Configuration		Destination to be confirmed
Cluster configuration	BMC and Management SW connection configuration	Management LAN IP-SW (including IP-SW provided by the customer)
	BMC direct connection configuration	Reset port (pm1)
Single node configuration	Using remote power control	Customer's LAN
	Not using remote power control	Confirmation is not required because no cable is connected to BMC port.

(b) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

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(c) Execute the bmcctl command in accordance with “Figure 2.18.2-1 Example of Executing bmcctl” in the cluster configuration and with “Figure 2.18.2-1-1 Example of Executing bmcctl” in the single node configuration.

```
$ sudo bmcctl -a 192.168.0.22:192.168.0.23 -n 255.255.255.0
```

Figure 2.18.2-1 Execution Example of bmcctl Command (In the cluster configuration)

```
$ sudo bmcctl -a 10.0.0.40
```

Figure 2.18.2-1-1 Execution Example of the bmcctl Command (In the single node configuration)

In the cluster configuration, To execute the bmcctl command, refer to (c-1) when you set the same network segment to BMC port and the management port, and refer to (c-2) when you set different network segment to BMC port and the management port.
If a message ID other than KAQM05226-Q and KAQM05227-Q is displayed, refer to Maintenance Tool “2.18.3 Command termination messages and action to be taken” (MNTT 02-1270).
Perform a propter action and execute the command again

(c-1) When you change the network segment of BMC port into the same network segment as the management port

If you change the network segment of BMC port into the same network segment as the management port, see Figure 2.18.2-1-2. KAQM05226-Q message is displayed.
Check that the configuration will be changed to the BMC and Management SW connection configuration.
After confirming that, enter “y” and press [Enter] key.
If a different configuration is displayed, enter “n” and press [Enter] key, confirm the address and then execute the command again.

```
$ sudo bmcctl  -a 192.168.0.22:192.168.0.23 -n 255.255.255.0
KAQM05226-Q The network configuration will be changed so that the BMC port is
connected to the IP switch because the management port and the BMC port have the
same network address. Are you sure you want to continue? (y/n) y
$
```

Figure 2.18.2-1-2 Execution Example of the bmcctl Command (change to the BMC and Management SW connection configuration)

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(c-2) When you change the network segment of BMC port into the different network segment from the management port

If you change the network segment of BMC port into the different network segment from the management port, see Figure 2.18.2-1-3. KAQM05227-Q message is displayed.
Check that the configuration will be changed to the BMC direct connection configuration.
After confirming that, enter “y” and press [Enter] key.
If a different configuration is displayed, enter “n” and press [Enter] key, confirm the address and then execute the command again.

```
$ sudo bmcctl -a 10.0.2.22:10.0.2.23 -n 255.255.255.0
KAQM05227-Q The network configuration will be changed so that the BMC port is
connected to pm1 because the management port and the BMC port have different
network addresses. Are you sure you want to continue? (y/n) y
$
```

Figure 2.18.2-1-3 Execution Example of the bmcctl Command (change to the BMC direct connection configuration)

(d) After you complete the settings, use the bmcctl command to check the settings. For details about how to use the bmcctl command to check the settings, refer to (2) Displaying the BMC port interface information”.

(2) Displaying the BMC port interface information

The output format for the bmcctl command execution is shown in Figure 2.18.2-2 “Output Format for bmcctl Command”.

```
Output format for bmcctl (After configuring a cluster)

Interface : [interface]
[node(Host name)]
Fixed IP addr : [fixedIP1]
Netmask : [netmask1]
Gateway : [gateway1]
[node(Host name)]
Fixed IP addr : [fixedIP2]
Netmask : [netmask2]
Gateway : [gateway2]

Output format for bmcctl (Before configuring a cluster)

Interface : [interface]
Fixed IP addr : [fixedIP1]
Netmask : [netmask1]
Gateway : [gateway1]

Output format for bmcctl (In the single node configuration)

Interface : [interface]
IP address : [IPaddress]
Netmask : [netmask]
Gateway : [gateway1]


*: Values acquired from the system are displayed within [ ].
```

Figure 2.18.2-2 Output Format for bmcctl Command

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Table 2.18.2-1 describes the details about the items in “Figure 2.18.2-2 Output Format for bmcctl Command”.

Table 2.18.2-1 Description of the Items in the Output Format

No.	Item	Description	
1	[interface]	Displays the name of the BMC. Displays as fixed bmc0.	
2	[node(*Host name*)]	Displays the unit name and host name of the login node.	
3	[In the cluster configuration] [fixedIP1] [In the single node configuration] [IPaddress]	Displays the fixed IP address assigned to the BMC in the node set in No. 2 (local node in the single configuration). If the IP address cannot be displayed, the following status is displayed in some cases: • Invalid (None): Displayed when no value can be acquired.	
4	[In the cluster configuration] [netmask1] [In the single node configuration] [netmask]	Displays the netmask set for the BMC in the node set in No. 2 (local node in the single configuration). If the netmask cannot be displayed, the following status is displayed in some cases: • Invalid (None): Displayed when no value can be acquired.	
5	[In the cluster configuration] [gateway1] [In the single node configuration] [gateway]	Displays the default gateway set for the BMC in the node set in No. 2 (local node in the single configuration). If the default gateway cannot be displayed, the following status is displayed in some cases: • 0.0.0.0: Displayed when the default gateway is invalid. • Invalid(None): Displayed when no value can be acquired.	
6	[node(*Host name*)]	Displays the unit name and host name of the other side node.	This is not displayed when the cluster is not configured or in the single node configuration.
7	[fixedIP2]	Displayss the fixed IP address assigned to the BMC in the node set in No. 6. The following status is displayed in some cases: • Invalid (None): Displayed when no value can be acquired. • Unknown: Dislayed when no information can be acquired. • Invalid([invalid-value]): Displayed when the value is invalid.	This is not displayed when the cluster is not configured or in the single node configuration.
8	[netmask2]	Displays the netmask set for the BMC in the node set in No. 6. The following status is displayed in some cases: • Invalid (None): Displayed when no value can be acquired. • Unknown: Dislayed when no information can be acquired. • Invalid ([invalid-value]): Displayed when the value is invalid.	This is not displayed when the cluster is not configured or in the single node configuration.
9	[gateway2]	Displays the default gateway set for the BMC in the node set in No. 6. The following status is displayed in some cases: • 0.0.0.0: Displayed when the default gateway is invalid. • Unknown: Dislayed when no information can be acquired. • Invalid ([invalid-value]): Displayed when the value is invalid.	This is not displayed when the cluster is not configured or in the single node configuration.

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Execute the bmcctl command according to the following procedure.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the bmcctl command. The execution example in the cluster configuration is shown in Figure 2.18.2-3, the execution example in the state of not configuring a cluster is shown in Figure 2.18.2-4, and the execution example in the single node configuration is shown in Figure 2.18.2-5.
If a message ID is displayed, refer to Maintenance Tool "2.18.3 Command termination messages and action to be taken" (MNTT 02-1270).
Perform a propter action and execute the command again.

```
$ sudo bmcctl

Interface                 :  bmc0
node 0(DFBQLNBX)
 Fixed IP addr            :  192.168.0.22
 Netmask                  :  255.255.255.0
 Gateway                  :  192.168.0.1
node 1(DFBQLNBX)
 Fixed IP addr            :  192.168.0.23
 Netmask                  :  255.255.255.0
 Gateway                  :  192.168.0.1
```

Figure 2.18.2-3 Execution Example of the bmcctl Command (In the cluster configuration)

```
$ sudo bmcctl

Interface                 :  bmc0
 Fixed IP addr            :  192.168.0.22
 Netmask                  :  255.255.255.0
Gateway                   : 192.168.0.1
```

Figure 2.18.2-4 Execution Example of the bmcctl Command (In the state of not configuring a cluster)

```
$ sudo bmcctl

Interface                 :  bmc0
 IP address               :  10.0.0.40
 Netmask                  :  255.255.255.0
Gateway                   : 192.168.0.1
```

Figure 2.18.2-5 Execution Example of the bmcctl Command (In the single node configuration)

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(3) Setting BMC account

NOTE: This option is unavailable depending on the model. Perform this option only by instruction.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the oslogget command in accordance with "Figure 2.18.2-6 Example of Executing bmcctl".
If a message is displayed, refer to Maintenance Tool "2.18.3 Command termination messages and action to be taken" (MNTT 02-1270).
Take appropriate action and execute the command again.

```
$ sudo bmcctl --account
```

Figure 2.18.2-6 Execution Example of the bmcctl Command

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2.18.3 Command termination messages and action to be taken

A message may be displayed when the mngroutedel command is executed. Actions to be taken against messages are described in Table 2.18.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.18.3-1 Message IDs and Action to be Taken (1/5)

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM05034-E	The specified IP address cannot be used because it is already in use. (IP address = <*IP address*>)	The specified IP address is already used.	Specify another IP address, and then retry the operation.
3	KAQM05035-E	IP addresses of different networks were specified in the same interface.	IP addresses of different networks are specified in the same interface.	When you set the interface, be sure that all the IP addresses in the same interface must be the same network.
4	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	An attempt to read the file to be used for the requested processing failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM05056-E	An attempt to write to the file to be used for the requested processing has failed.	An attempt to write to the file to be used for the requested processing failed.	
6	KAQM05115-E	The format of the specified IP address is invalid. (IP address = <*IP address*>)	The format of the specified IP address is incorrect.	Use the correct IP address format to specify the IP address.
7	KAQM05117-E	An IP address that was specified when the interface was set up is duplicated. (IP address = <*IP address*>)	The IP address specified for the BMC LAN port is already used.	Specify a different IP address.
8	KAQM05157-E	The IP address of the other node in a cluster cannot be specified in a noncluster configuration.	You cannot specify the IP address of the BMC LAN port in the other side node when no cluster is created. (Different message is displayed if the OS version is 2.1.1-XX.)	Request the system administrator to create a cluster. Alternatively, check the command format, specify the correct parameters, and re-execute the command.
9	KAQM05159-E	The network identified by the specified IP address and netmask cannot be used because it is already in use. (network address = <network address >)	The network identified by the specified IP address and netmask is already in use.	* This is output only when the BMC direct connection configuration. Check the interface settings. If the network identified by the specified IP address and netmask is already in use, specify another IP address or netmask.

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Table 2.18.3-1 Message IDs and Action to be Taken (2/5)

No.	Message ID	Message	Description	Action
10	KAQM05030-E	In the cluster, nodes that cannot synchronize exist.	The nodes in the cluster cannot synchronize with each other.	Check the following: 1. Whether the BMC LAN port settings or routing settings affect the network settings of the Management ports. To check the settings, use the mngiflist command (Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800)) and mngroutelist command (Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960)). 2. Whether the OS of one node in the cluster is terminated. To check, use the clstatus command (Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040)). 3. Verify the status of each port with the hwstatus command, "B.3.1 Displaying the Hardware Status (hwstatus)" to check if a network failure has occurred. If the error reoccurs, the connection with the NIS server, DNS server, or LDAP server might be incorrect. Request the system administrator to cancel the settings of each server and execute the command again. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
11	KAQM05161-E (*1)	The BMC port IP address cannot be set because the network address generated from the specified IP address and netmask is different from the management port network address. (BMC port network address = <*BMC port network address*>, management port network address = <*management port network address*>)	The network segment identified from the specified IP address and the netmask is different from the network segment of the Management port.	Specify that the unique IP address of the BMC port and the Management port are in the same network segment. To confirm the IP address of the Management port, refer to Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800).

*1: This is not output if the OS version is 3.2.2-XX and later. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

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Table 2.18.3-1 Message IDs and Action to be Taken (3/5)

No.	Message ID	Message	Description	Action
12	KAQM05162-E	The network address cannot be changed because the fixed IP address of one of the nodes has not been specified.	The network segment cannot be changed because the unique IP address of the other side node is omitted.	To change the network segment, specify the unique IP address of the both nodes as described in the execution example.
13	KAQM05171-E	The IP address of the BMC port cannot be set because the network address of the specified IP address differs from the network address of the private maintenance port. (BMC port network address = <*BMC address*>, private maintenance port network address = < *Private Maintenance port network address* >)	The specified IP address and the network segment identified by the netmask are different from the network segment of private Maintenance port.	To be the same network segment between the BMC port and the private maintenance port, specify the unique IP address of BMC port and the netmask and retry the operation. For the IP address of Private Maintenance port confirmation, refer to Maintenance Tool "2.41 Configuring a Private Maintenance Port (pmctl)" (MNTT 02-2370).
14	KAQM05226-Q	The network configuration will be changed to connect the BMC port to the IP switch and give the management and BMC port unique network addresses. Are you sure you want to continue? (y/n) (*1)	The network configuration will be changed to connect the BMC port to the IP switch and give the management and BMC port unique network addresses. Are you sure you want to continue? (y/n)	* This is output only when the configuration will be changed after the BMC IP address setting. To change the configuration to the BMC and Management SW connection configuration, enter "y." To change the configuration to the BMC direct connection configuration, enter 'n', confirm IP address of BMC port and the management port, and then execute the command again.
15	KAQM05227-Q	The network configuration will be changed so that the BMC port is connected to pm1 because the management port and the BMC port have different network addresses. Are you sure you want to continue? (y/n)	The network configuration will be changed so that the BMC port is connected to the reset port because the management port and the BMC port have different network addresses. Are you sure you want to continue? (y/n)	* This is output only when the configuration will be changed after the BMC IP address setting. To change the configuration to the BMC direct connection configuration, enter "y." To change the configuration to the BMC and Management SW connection configuration, enter 'n', confirm IP address of BMC port and the management port, and then execute the command again.
16	KAQM05228-W	The BMC port settings were completed, but an attempt to communicate with the BMC port on the other node failed.	The BMC port settings were completed, but an attempt to communicate with the BMC port on the other node failed.	An error might have occurred on BMC LAN cable or on BMC port. If the BMC port is connected to the reset port, an error might have occurred on the reset port LAN cable or on the reset port. Check that the LAN cable is connected properly. If the error reoccurs, collect OS logs and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

*1: If the OS version is earlier than 4.1.1-XX, the KAQM05226-Q message "The network configuration will be changed so that the BMC port is connected to the IP switch because the management port and the BMC port have the same network address. Are you sure you want to continue? (y/n)" is displayed.

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Table 2.18.3-1 Message IDs and Action to be Taken (4/5)

No.	Message ID	Message	Description	Action
17	KAQM05231-E	The specified IP address cannot be set because it is already in use on the physical node. (IP address = <*IP-address*>)	The specified IP address cannot be set as it has already been used on the physical node.	This is output in case of the cluster configuration. Confirm the configuration of the interface. If the specified IP address has already been used on the Virtual Server to be configured, specify another IP address.
18	KAQM05239-E	The specified IP address cannot be set because it is already in use on the same interface. (IP address = <*IP address*>)	The specified IP address cannot be set as it has already been used on the same interface within the cluster.	Confirm the configuration of the interface and the specified IP address. If an error is still displayed even if non used IP address is specified and executed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
19	KAQM05240-E	The network address defined by the specified IP address and netmask is in use on the physical node. (network address = <*IP-address*>)	The specified IP address cannot be set as it has already been used on the physical node.	Check the interface configuration. If the specified IP address and netmask have already been used on the Physical Node, specify another IP address or netmask.
20	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
21	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.18.3-1 Message IDs and Action to be Taken (5/5)

No.	Message ID	Message	Description	Action
22	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
23	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
24	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
25	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
26	KAQM14150-E	An error occurred in the system.	An error occurred in the system.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.19 Collecting Logs (oslogget)

The command collects log files of the Virtual Server running in the Physical node and the execution node.

NOTE: When the OS version is 4.1.2-XX or earlier, collect logs and then execute the log.sh command to collect the internal log of the internal RAID controller.
For collecting the internal log of the internal RAID controller (log.sh), refer to Maintenance Tool "2.55 Embedded RAID Controller Internal Log Acquisition (log.sh)" (MNTT 02-3080).

2.19.1 Command line

This command uses the following command lines.

- To collect log files in the case the OS version is 3.0.1-XX or earlier:
  oslogget [normal | detail | full]
- To collect log files in the case the OS version is 3.1.0-XX or later:
  oslogget [-p | --vserver virtual-server-id]
- To output the command format to the standard output:
  oslogget -h

Table 2.19.1-1 shows the description of each option, and Table 2.19.1-2 shows log files which can be acquired by combinations of options and arguments in the case the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

Table 2.19.1-1 Description of the Options

No.	Option	Description	Remark
1	-p	This can be specified in case of collecting only the log files of the Physical node.	This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060). Specify this option only when you are instructed to do so.
2	--vserver virtual-server-id (*6)	This can be specified in case of collecting OS log files in full version of the specified Virtual Server.	
3	normal (*1)	Specify this option to collect the normal logs.	The log file name is as follows: fast_oslog_*.tar.gz (*4) (*5)
4	detail (*1)	Specify this option to collect the detail logs.	The log file name is as follows: oslog_*.tar.gz (*4) (*5)
5	full or no option (*2) (*3)	Specify this option to collect the full logs (default).	The log file name is as follows: full_oslog_*.tar.gz (*4) (*5)
6	-h	Output the command format to the standard output.	KAQM14136-I is displayed while executing.

*1: Normal and Detail are the option dedicated to Hitrack transferring.
*2: If you omit the option, full version is collected. Normally, collect full version.
*3: If you want to collect log files in maintenance mode, specify full or do not specify any option.
*4: * represents "device-serial-number_collection-date (YYYYMMDDhhmmss)". If you cannot acquire a device serial number, it is replaced by "maintenance".
*5: Log files are stored under "/log/".
*6: HDI does not support Virtual Server.

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Table 2.19.1-2 Option-Argument Combinations and Collected Contents

Item #	Option	Collected contents
	-p	
1	—	OS logs of the Physical node in the executed node
2 (*1)	Yes	OS logs of the Physical node

*1: This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

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2.19.2 Execution procedure

This subsection describes the procedure for executing the oslogget command.
If you want to operate the procedure in the Physical node only and collect log files while the OS is running, refer to 2.19.2 (1) Collecting log files while the OS is running.
If you want to collect log files in maintenance mode, refer to Maintenance Tool "2.19.2 (2) Collecting log files in maintenance mode" (MNTT 02-1330).
When running the oslogget command on the maintenance mode to isolate the failure, refer to Maintenance Tool "(3) When running the oslogget command on the maintenance mode to isolate the failure" (MNTT 02-1332).

Confirm with the system administrator whether the operation is performed in the Physical node. If it cannot be confirmed, refer to Maintenance Tool "3.4 Operation determination of the Physical node" (MNTT 03-0110) and determine which operation method is relevant.

(1) Collecting log files while the OS is running

(a) Log in to the node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the oslogget command in accordance with "Figure 2.19.2-1 Example of Executing oslogget".
If a message ID is displayed, refer to Maintenance Tool "2.19.3 Command termination messages and action to be taken" (MNTT 02-1340).
Take appropriate action and execute the command again.

```
$ sudo oslogget
```

Figure 2.19.2-1 Execution Example of the oslogget Command

NOTE: Specify No option when executing a command.

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(c) When you perform step (b), the progress of collecting log files is displayed as shown in "Figure 2.19.2-2 Displaying Progress of Log File Collection".
When "Processing completed." is displayed, log file collection is successful and the collected log files are stored under "/log/".

```
progress=[0/7] Processing started.
progress=[0/7] Processing started.
progress=[1/7] Collecting log files...
progress=[2/7] Collecting log files...
progress=[3/7] Collecting log files...
progress=[4/7] Collecting log files...
progress=[5/7] Collecting log files...
progress=[6/7] Collecting log files...
progress=[7/7] Processing completed.
```

Figure 2.19.2-2 Displaying Progress of Log File Collection

(d) Execute "ls -lL /log" as shown in Figure 2.19.2-3, and confirm that the log file is collected under the "/log/".

```
$ ls -lL /log
total 34504
-rw-r--r-- 1 root root 35331988 2010-03-12 15:01 full_oslog_ FBQLNBX _20100312145803.tar.gz
```

Figure 2.19.2-3 Log File Confirmation

(e) As shown in Figure 2.19.2-4, execute a file transfer command on the command prompt of the maintenance PC with specifying "/log/*" as the source of downloading to download the log files collected in step (c) to the maintenance PC.
The example as follows is shown at this step.
- pscp is used as a file transfer command
- The IP address of the maintenance port of the node which is the source of downloading the log files is "10.0.0.50".
- The files are downloaded under (C:\work)

For details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (2) Downloading files to the maintenance PC" (MNTT 01-0240).

```
C:\>pscp -scp -unsafe service@10.0.0.50:/log/* C:\work
```

Figure 2.19.2-4 Downloading Log File to the Maintenance PC

NOTE: When you execute the oslogget command, the previously collected log files will be deleted. Therefore, be sure to download log files to the maintenance PC after you collect them.

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(2) Collecting log files in maintenance mode

(a) Start the node to operate in maintenance mode.
For details about how to start maintenance mode, refer to "Set Up '6.3 Maintenance Mode' (SETUP 06-0050)".

(a-1) In the single node configuration, the port position to be connected LAN cable of maintenance PC will be changed after starting up with the maintenance mode. refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

(b) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(c) Execute the oslogget command in accordance with "Figure 2.19.2-14 Example of Executing oslogget".
If a message ID is displayed, refer to Maintenance Tool "2.19.3 Command termination messages and action to be taken" (MNTT 02-1340).
Perform a propter action and execute the command again.

```
$ sudo oslogget
```

Figure 2.19.2-14 Execution Example of the oslogget Command

NOTE: Do not specify any option in the maintenance mode. If you specify an option, the command ends with an error.

(d) When you perform step (c), the progress of collecting log files is displayed. When "Processing completed." is displayed, log file collection is successful and the collected log files are stored under "/log/". For details about the progress indication, refer to Maintenance Tool "Figure 2.19.2-2 Displaying Progress of Log File Collection" (MNTT 02-1320).
The log files are stored under "/log/".

(e) Execute "ls -lL /log" as shown in Figure 2.19.2-15, and confirm that the log file is collected under the "/log/".

```
$ ls -lL /log
total 34504
-rw-r--r-- 1 root root 35331988 2010-03-12 15:01 full_oslog_ FBQLNBX _20100312145803.tar.gz
```

Figure 2.19.2-15 Log File Confirmation

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(f) As shown in Figure 2.19.2-16, execute a file transfer command on the command prompt of the maintenance PC with specifying "/log/*" as the source of downloading to download the log files collected in step (d) to the maintenance PC.
The example as follows is shown at this step.
- pscp is used as a file transfer command
- The IP address of the maintenance port of the node which is the source of downloading the log files is "10.0.0.50".
- The files are downloaded under (C:\work)

For details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230).

```
C:\>pscp -scp -unsafe service@10.0.0.50:/log/* C:\work
```

Figure 2.19.2-16 Downloading Log Files to the Maintenance PC

NOTE: When you execute the oslogget command, the previously collected log files will be deleted. Therefore, be sure to download log files to the maintenance PC after you collect them.

(g) Terminate maintenance mode.
For details about how to terminate maintenance mode, refer to "Set Up '6.3.3 Maintenance mode termination' (SETUP 06-0090)".

(h) In the single node configuration, the LAN Cable re-connection may be needed after terminating maintenance mode. For detail, refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

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(3) When running the oslogget command on the maintenance mode to isolate the failure.

When the maintenance mode starts, nothing is mounted on /target. However when the oslogget command runs after starting the maintenance mode, oslogget mounts the partition of OS LU on /target.
Because the partition of OSLU is still mounted even after running the oslogget command, check the mount status of /target and isolate either the RAID controller failure or the OS data failure.

(a) Start the node to operate in maintenance mode.
For details about how to start maintenance mode, refer to "Set Up '6.3 Maintenance Mode' (SETUP 06-0050)".

(b) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(c) Run the oslogget command in accordance with the running example of oslogget shown in Figure 2.19.2-17. When the message ID is displayed, refer to Maintenance Tool "2.19.3 Command termination messages and action to be taken" (MNTT 02-1340).

```
$ sudo oslogget
```

Figure 2.19.2-17 Execution Example of the oslogget Command

NOTE: In the maintenance mode, be sure to specify "NO argument". If the argument is specified as an option, terminated with an error.

(d) Progress status of the log file collection is displayed when (c) is performed.
After "Processing completed." is displayed finally, go to step (e).

(e) Check the OSLU mount status to determine either the RAID controller failure or the OS data failure.
Run "grep△-c△/target△/etc/mtab" (△ means a space) and confirm the displayed values.

If zero is displayed, this means the RAID controller failure.
If one or more is displayed, this means the OS data failure.

```
$ grep -c /target /etc/mtab
8
```

Figure 2.19.2-19 Confirmation Example of the Mount Status

(f) Terminate maintenance mode.
For details about how to terminate maintenance mode, refer to "Set Up '6.3.3 Maintenance mode termination' (SETUP 06-0090)".

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2.19.3 Command termination messages and action to be taken

When you execute the oslogget command, messages might be displayed. Table 2.19.3-1 lists the action to be taken for each message ID.

Table 2.19.3-1 Messages and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Wait for a while and reexecute. If an error occurs again, collect OS Log and send it to the Support Center. For the method of collecting OS Log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
4	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
5	KAQM38016-E	Acquisition of some OS log files failed, because there is not enough free space for all of the OS log files.	There is no insufficient free space to store the OS log files.	Request the System Administrator executing sysinfoget command with "--del" option to delete the operation information output in OS disk. After that execute oslogget command again on the physical node. If an error occurs again, collect OS Log and send it to the Support Center.
6	KAQM38017-E	A parameter was specified that cannot be specified in maintenance mode.	An argument was specified during maintenance mode.	Do not specify any argument. For details, refer to Maintenance Tool "2.19.2 (2) Collecting log files in maintenance mode" (MNTT 02-1330).
7	KAQM38018-E	Collection of the OS log files has failed.	Failed to correct the OS log files.	Execute the command again after a while. If the error occurs again, please call the Support Center.
8	KAQM38019-E	An unexpected error occurred.	An unexpected error occurred.	Please call the Support Center.
9	KAQM38020-E	The oslogget command is already running.	The specified command is started multiply.	Execute the command again after a while.
10	KAQM38040-E	The specified virtual server is running on the other node or the status is incorrect.	The specified Virtual Server is not operating in the local node.	Execute the vnaslist command, confirm again which of the nodes the Virtual Server is operating in, and reexecute. For details about the vnaslist command, refer to Maintenance Tool "2.74 List of Virtual Servers (vnaslist)" (MNTT 02-3900).
11	KAQM38041-E	Some of the OS log files might not have been collected because an error occurred during the collection of the OS log files. (error code = <*error code*>)	OS log file collection failed.	Report the contents displayed by the "error code" to the Support Center.

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Table 2.19.3-1 Messages and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
12	KAQM38043-E	The specified virtual server does not exist.	The specified virtual server does not exist.	Confirm the target Virtual Server by the vnaslist command. For details about the vnaslist command, refer to Maintenance Tool "2.74 List of Virtual Servers (vnaslist)" (MNTT 02-3900).
13	KAQM38044-E	Some of the OS log files were not collected because there is not enough free space to store them.	Some of the OS log files were not collected because there is not enough free space to store them.	After downloading collected log files, acquire the individual logs of the Virtual Server which failed to be collected.
14	KAQM38045-E	One or more virtual server OS log files were not collected because a stopped virtual server is locked.	Some resources of the stopped Virtual Server are being used by other users.	After downloading collected log files, wait a while and acquire the individual logs of the Virtual Server which failed to be collected.
15	KAQM38046-E	Some of the virtual server OS log files were not collected because virtual servers are in the process of starting or stopping, or an error occurred on the virtual servers.	A Virtual Server is in the process of starting or stopping.	After downloading collected log files, confirm the completion of the startup or the termination by using the vnaslist command, and acquire the individual logs of the Virtual Server which failed to be collected. For details about the vnaslist command, refer to Maintenance Tool "2.74 List of Virtual Servers (vnaslist)" (MNTT 02-3900).
16	KAQM38047-E	Some of the virtual server OS log files were not collected because an error occurred during the collection of the virtual server OS log files.	An error occurred during the collection of the virtual server OS log files.	After downloading the collected log files, wait a while and acquire the individual logs of the Virtual Server which failed to be collected. If the error occurs again, please call the Support Center.
17	KAQM38048-E	The OS log files were successfully collected, but post-collection processing for the OS log files of some of the virtual servers failed.	Post-collection processing for the OS log files of the terminated virtual servers failed.	Send the collected log files and report the Virtual Server which failed post-collection processing to the Support Center.
18	KAQM38049-E	Some of the OS log files might not have been collected because a status acquisition error occurred.	Status acquisition of some of the virtual server failed.	After downloading collected log files, Check the status of the Virtual Server by using the vnaslist command. Request to restore the Virtual Server to the normal status and re-collect log files of the target Virtual Server after recovery. If the error occurs again, please call the Support Center. For details about the vnaslist command, refer to Maintenance Tool "2.74 List of Virtual Servers (vnaslist)" (MNTT 02-3900).
19	KAQM38050-E	Collection of the OS log files failed.	OS log file collection failed.	Execute the command again after a while. If the error occurs again, please call the Support Center.

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2.20 Setting whether to Collect Dumps (dumpset)

The command sets whether to collect dumps or not. By default, dumps are collected for the cluster configuration, the single node configuration.

NOTE:
- This is not supported in the single node configuration.
- Do not use this command to collect dumps unless otherwise instructed to do so.
- HDI does not support Virtual Server.

2.20.1 Command line

This command uses the following command lines.

- To set whether to collect dumps of the Physical node:
  dumpset [--on | --off]

- To set whether to collect dumps of the Virtual Server:
  dumpset [--on | --off] --vserver

- To display the current setting of whether to collect dumps of the Physical node:
  dumpset

- To display the current setting of whether to collect dumps of the Virtual Server:
  dumpset --vserver

- To display the command format on the standard output:
  dumpset -h

Table 2.20.1-1 describes the options.

Table 2.20.1-1 Description of the Options

No.	Option	Description	Remark
1	--on	Set this option to collect dumps.	—
2	--off	Set this option if you do not want to collect dumps.	—
3	--vserver	Set this option if you want to set/display whether to collect dumps of the Virtual Server. If this option is omitted, the setting/display of whether to collect dumps of the Physical node is performed. Do not specify this option in the single node configuration.	This option can be specified if the OS version is .3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060). HDI does not support Virtual Server.
4	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.20.2 Execution procedure

This subsection describes the procedure for executing the dumpset command.
If you want to specify whether to collect dumps, refer to 2.20.2 (1) Specifying whether to collect dumps.
If you want to display the setting of whether to collect dumps, refer to Maintenance Tool "2.20.2 (2) Displaying the current information of whether to collect dumps" (MNTT 02-1380).

(1) Specifying whether to collect dumps

NOTE: Always collect dumps unless otherwise instructed to do so.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the dumpset command in accordance with Figure 2.20.2-1 if the setting without collecting dumps of the Physical node is performed, Figure 2.20.2-2 if the setting including collecting dumps of the Physical node is performed.
If a message ID is displayed, refer to Maintenance Tool "2.20.3 Command termination messages and action to be taken" (MNTT 02-1390).
Perform a propter action and execute the command again.

```
$ sudo dumpset --off
```

Figure 2.20.2-1 Execution Example of the dumpset Command (If the setting without collecting dumps of the Physical node is performed)

```
$ sudo dumpset --on
```

Figure 2.20.2-2 Execution Example of the dumpset Command (If the setting including collecting dumps of the Physical node is performed)

(c) After you complete the settings, use the dumpset command to check the settings. For details about how to use the dumpset command to check the settings, refer to Maintenance Tool "2.20.2 (2) Displaying the current information of whether to collect dumps" (MNTT 02-1380).

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(2) Displaying the current information of whether to collect dumps

The output format for the dumpset command execution is shown in Figure 2.20.2-5 “Output Format for dumpset Command”.

```
Output format for dumpset
(In case the OS version is earlier than 3.1.0-XX)

[status]

(In case the OS version is 3.1.0-XX or later and no option is specified)

Physical Node    : [status]


*: Values acquired from the system are displayed within [  ]
```

Figure 2.20.2-5 Output Format for dumpset Command

Table 2.20.2-1 describes the details about the item in “Figure 2.20.2-2 Output Format for dumpset Command”.

Table 2.20.2-1 Description of the Item in the Output Format

No.	Item	Description	Remark
1	[status]	Displays the current setting information.	on : Collects dumps. off : Does not collect dumps.

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Execute the dumpset command according to the following procedure.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) By executing the dumpset command, current setting information is displayed as shown in Figure 2.20.2-6 (when the OS version is earlier than 3.1.0-XX), Figure 2.20.2-7 (when the OS version is 3.1.0-XX or later and no option is specified.
If a message ID is displayed, refer to Maintenance Tool "2.20.3 Command termination messages and action to be taken" (MNTT 02-1390).
Perform a propter action and execute the command again.

```
$ sudo dumpset
on
```

Figure 2.20.2-6 Execution Example of the dumpset Command (when the OS version is earlier than 3.1.0-XX)

```
$ sudo dumpset
Physical Node    : on
```

Figure 2.20.2-7 Execution Example of the dumpset Command (when the OS version is 3.1.0-XX or later and no option specified)

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2.20.3 Command termination messages and action to be taken

When you execute the dumpset command, messages might be displayed. Table 2.20.3-1 lists the action to be taken for each message ID.

Table 2.20.3-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
5	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.21 Procedure for Collecting Dump Files

This section describes the procedure for collecting dump files.
The OS stores up to two generations of dump files of the Physical node. Dump files usually exist in levels 1 and 4 (However, when the dump file creation fails, the level1 is not created and the levels 3 and 4 dump files are created). Basically, maintenance personnel collect only level 1 dump files and the system administrator collects level 4 dump files because they contain customer information. However, when requested by system administrators, maintenance personnel can collect all levels of dump files.

The overview of collecting dump files is shown in Figure 2.21-1 in the case the OS version is 2.1.1-XX and the case the OS version is 2.2.1-XX or later is shown in Figure 2.21-2.
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
Confirm with the system administrator in advance whether the operation is performed in the Physical node before collecting dump files. If it cannot be confirmed, refer to Maintenance Tool "3.4 Operation determination of the Physical node" (MNTT 03-0110) and determine the operational method.

- The overview of collecting dump files of the Physical node
  Basically, when dump files are created, maintenance personnel need to collect all the dump files that exist on the OS (Figure 2.21-1 (1), Figure 2.21-2 (1)).
  If maintenance personnel do not collect dump files even when dump files of two generations exist, the second-generation dump file will be overwritten by the next latest dump file when it is created (Figure 2.21-1 (2), Figure 2.21-2 (2)).
  When a system administrator collects dump files on the HFSM in the case of cluster configuration and on the GUI for management in the single node configuration, if a dump file is created after the first generation is collected, the collected dump file is overwritten by the newest dump file and the non-collected dump file remains uncollected (Figure 2.21-1 (3), Figure 2.21-2 (3)).

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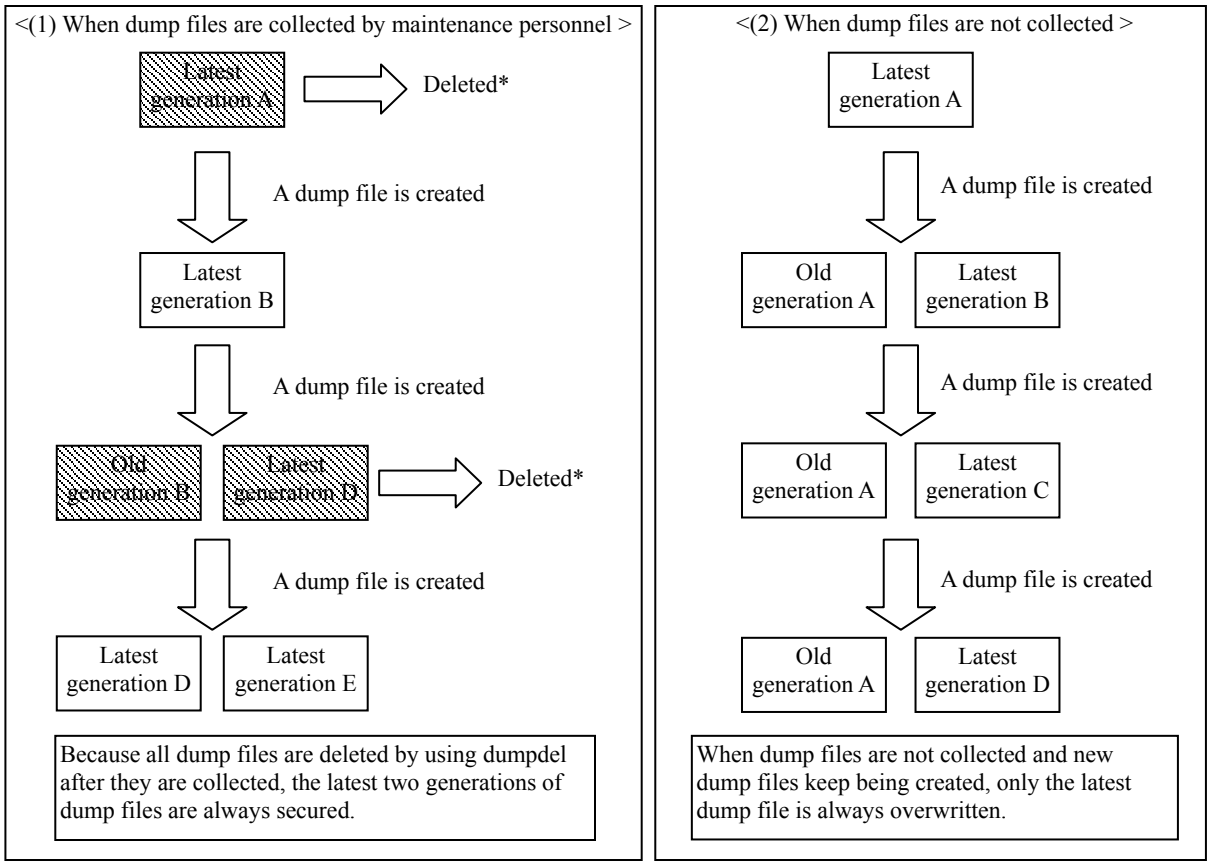
- If the OS version is 2.1.1-XX



: Collected

: Not collected

*: Because all the dump files of levels 1 and 4 are to be deleted, you need to work with your system administrator to confirm that all the dump files are collected.

Figure 2.21-1 Overview of Collecting Dump Files (1) (2)

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- If the OS version is 2.1.1-XX

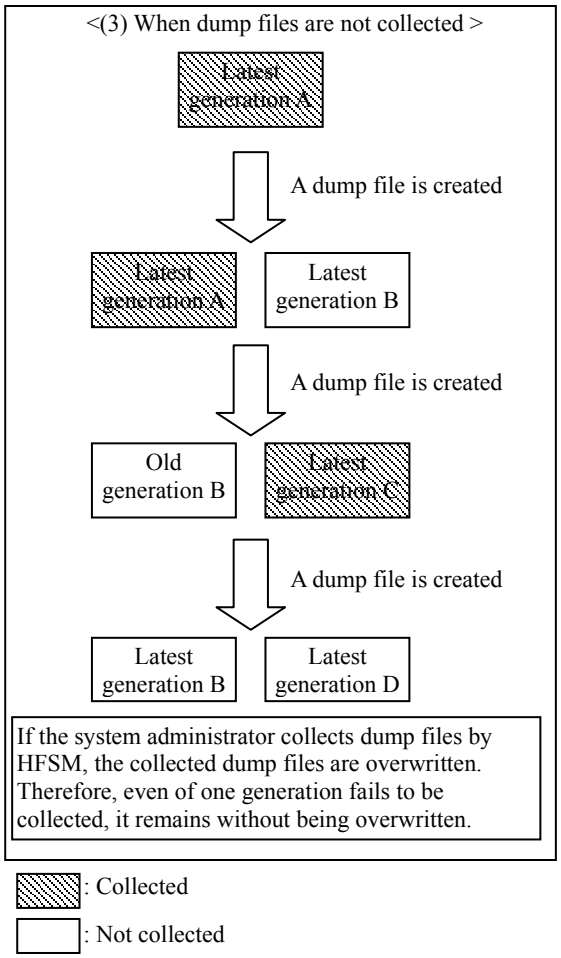

Figure 2.21-1 Overview of Collecting Dump Files (3)

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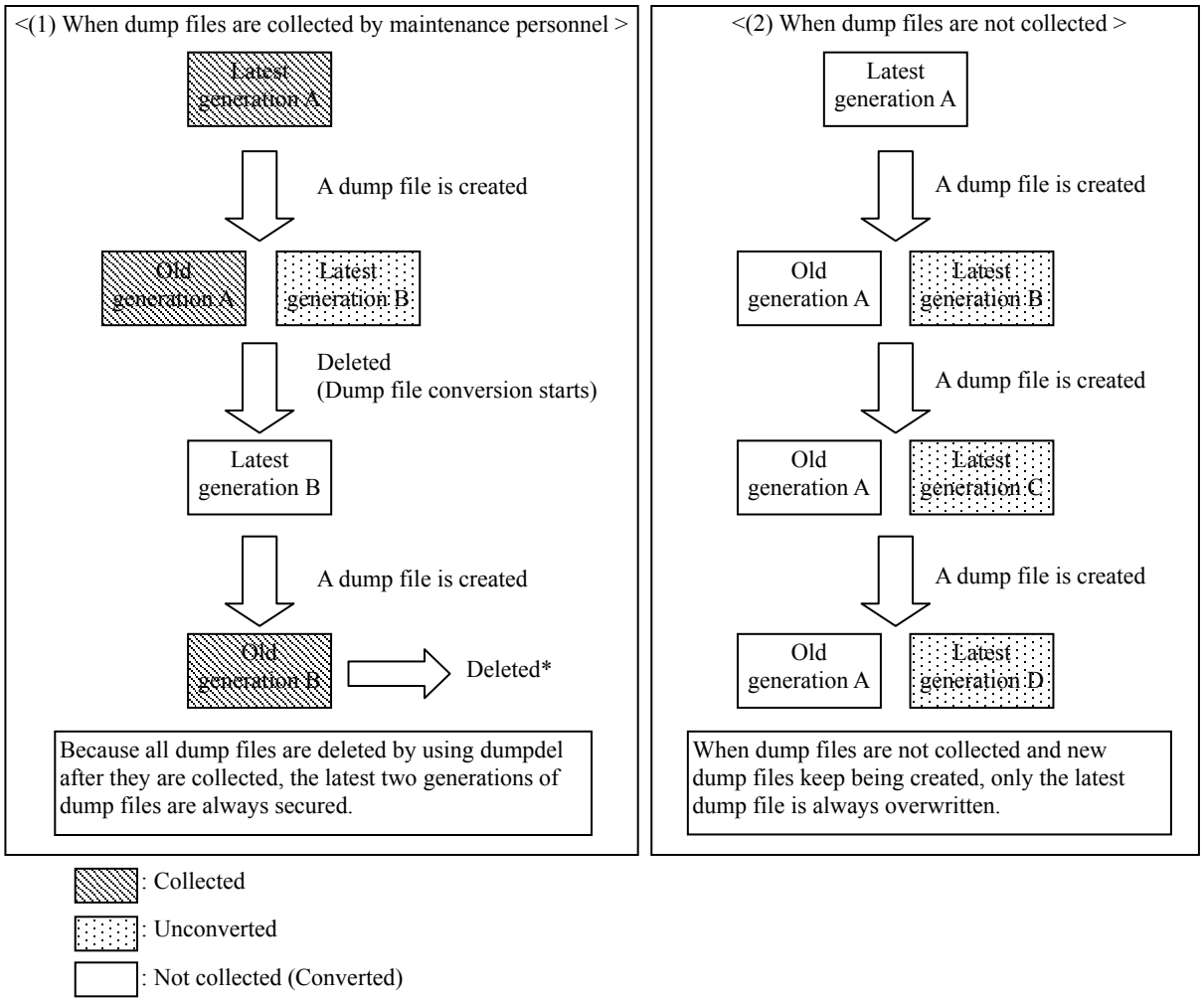
- If the OS version is 2.2.1-XX or later



: Collected

: Unconverted

: Not collected (Converted)

*: Because all the dump files of levels 1 and 4 are to be deleted, you need to work with your system administrator to confirm that all the dump files are collected.

Figure 2.21-2 Overview of Collecting Dump Files (1) (2)

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- If the OS version is 2.2.1-XX or later

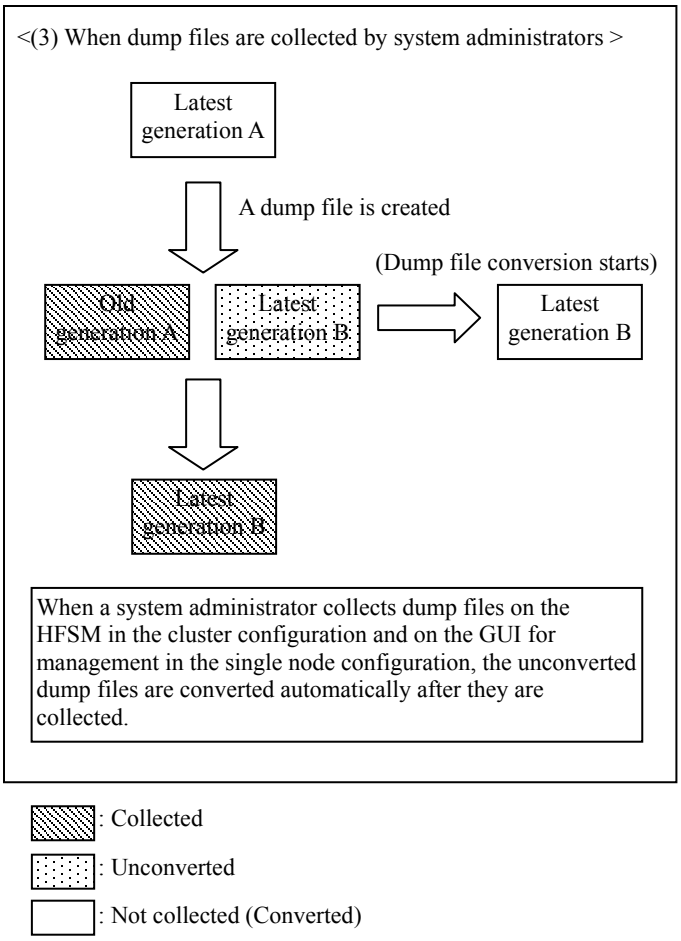

Figure 2.21-2 Overview of Collecting Dump Files (3)

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2.21.1 Collecting dump files

Use a file transfer command to download dump files to the maintenance PC. The following procedure describes how to collect dump files.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Maintenance personnel should download Level-1 dump files to the maintenance PC and they should request system administrators to collect the dump files of level 4.
However, when requested by system administrators, maintenance personnel can download all the files of levels 1 and 4 to the maintenance PC.

(3) When you download only the dump files of level 1 to the maintenance PC, execute "ls -lL /dump/download/service/dump_YYYYMMDDhhmmss" as described in Figure 2.21.1.1-1, and check whether the dump files exist under "/dump/download/service/dump_YYYYMMDDhhmmss".
When you are requested by your system administrator to download all the dump files of levels 1 and 4 to the maintenance PC, execute "ls –lL /dump/download/all/dump_YYYYMMDDhhmmss", and check whether the dump files exist under "/dump/download/all/dump_YYYYMMDDhhmmss". (YYYYMMDDhhss indicates the year, month, day, hour, minute, and second.)
The format of a dump file name of the Physical node is "dump_<device-serial-number>_v<VServer ID>_YYYYMMDDhhmmss.lv <level>.cz_<division-identifier>" or "dump_<device-serial-number >_YYYYMMDDhhmmss.lv <level>.cz.<division-identifier>.
(device -serial-number: the device serial number of the node that you collected dump files. The level is 1 or 4. The division-identifier is used for file division and it is aa, ab, ac, and so on.)

```
$ ls -lL /dump/download/service/dump_20100310213426/
total 168340
-r-------- 1 service service  37595009 2010-03-10 21:35
dump_T019000033_20100310213426.lv1.cz.aa
-r-------- 1 service service 134780390 2010-03-10 21:35
dump_T019000033_20100310213426.lv1.cz.ab
```

Figure 2.21.1-1 Dump File Confirmation (When checking with "/dump/download/service/dump_YYYYMMDDhhmmss")

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(4) Execute a file transfer command on the command prompt of the maintenance PC to download all the dump files to the maintenance PC. For details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (2) Downloading files to the maintenance PC" (MNTT 01-0240).
The following figure shows an example of using pscp.

When you download only the level-1 dump files to the maintenance PC, download the files under the folder shown in Figure 2.21.1-3 (/dump/download/service).

```
C:\>pscp -r -scp -unsafe service@10.0.0.50:/dump/download/service C:\work
```

Figure 2.21.1-3 Downloading Dump Files to the Maintenance PC (Level 1 Only)

When you are requested by your system administrator to download all the dump files including level 4 to the maintenance PC, download the files under the folder shown in Figure 2.21.1-4 (/dump/download/all).

```
C:\>pscp -r -scp -unsafe service@10.0.0.50:/dump/download/all C:\work
```

Figure 2.21.1-4 Downloading Dump Files to the Maintenance PC (All Levels)

NOTE: When you collect dumps, a folder is created with the date you collected them. Therefore, add the -r option to the command and download the entire folder.

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(5) After you complete downloading dump files, check whether all the dump files are downloaded to the maintenance PC.
Check the file names and sizes of the dump files that are downloaded to the maintenance PC as follows and make sure the file names and sizes are consistent:
- When you downloaded the dump files under "/dump/download/service/dump_YYYYMMDDhhmmss", execute "ls -lL -k /dump/download/service/dump_YYYYMMDDhhmmss" as shown in Figure 2.21.1-5.
- When you downloaded the dump files under "/dump/download/all/dump_YYYYMMDDhhmmss", execute "ls -lL -k /dump/download/all/dump_YYYYMMDDhhmmss".
If you downloaded only the level 1 dump files, check with the system administrator to check whether the dump files of level 4 are already downloaded. If the system administrator answers he/she has not downloaded the files yet, request him/her to do so or acquire permission from the system administrator to download all the dump files to the maintenance PC yourself by referring to step (4).

```
$ ls -lL -k /dump/download/service/dump_20100310213426/
total 168340
-r-------- 1 service service  36714 2010-03-10 21:35 dump_FBQLNBX_20100310213426.lv1.cz.aa
-r-------- 1 service service 131622 2010-03-10 21:35 dump_FBQLNBX_20100310213426.lv1.cz.ab
```

Figure 2.21.1-5 Dump File Confirmation (When checking with "/dump/download/service/dump_YYYYMMDDhhmmss")

(6) Use the dumpdel command to delete all the dump files as shown in Figure 2.21.1.1-6. For details about how to delete dumps, refer to Maintenance Tool "2.21.2 Deleting dumps (dumpdel)" (MNTT 02-1440).

```
$sudo dumpdel
```

Figure 2.21.1-6 Deleting Dump Files After They are Downloaded

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2.21.2 Deleting dumps (dumpdel)

The command deletes all dump files. Note that if the OS version is later than2.2.1-XX and if there are unconverted dump files after the dump file deletion, execute the dump file conversion for the dump files. However, only the deletion of the dump files is executed in the case of the maintenance mode.
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

NOTE: You must acquire all dump files before you execute this command.

2.21.2.1 Command line

This command uses the following command lines.

- To delete dump files:
  dumpdel [-y]

- To display the command format on the standard output:
  dumpdel -h

Table 2.21.2.1-1 shows the description of each option.

Table 2.21.2.1-1 Description of the Options

No.	Option	Description	Remark
1	-y	Specify this option to inhibit the output of the confirmation message.	Do not execute this option unless other wide instructed to do so.
2	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.21.2.2 Execution procedure

This subsection describes the procedure for executing the dumpdel command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Check whether all the dump files are downloaded to the maintenance PC. To check whether the files are downloaded, check the file names and sizes that they are consistent. If the files are not downloaded yet, refer to Maintenance Tool "1.3.5 Commands used for transferring files (2) Downloading files to the maintenance PC" (MNTT 01-0240) and transfer all the dump files.

(3) Execute the dumpdel command in accordance with "Figure 2.21.2.2-1 Example of Executing dumpdel".
If a message ID is displayed, refer to Maintenance Tool "2.21.2.3 Command termination messages and action to be taken" (MNTT 02-1460).
Perform a propter action and execute the command again.

```
$ sudo dumpdel
```

Figure 2.21.2.2-1 Execution Example of the dumpdel Command

(4) When you perform step (3), the confirmation message (KAQM38004-Q) shown in Figure 2.21.2.2-2 is displayed. Enter y. Dump files will be deleted.
When you enter n, the deletion will be canceled.
At this step, if the OS version is 2.2.1-XX or later and if there are unconverted dump files at this time, a message is displayed as in Figure 2.21.2.2-3, if the OS version is 3.0.1-XX or later and if there are unconverted dump files at this time, a message is displayed as in Figure 2.21.2.2-4 and the latest dump file is created.
After the dump file creation, proceed to (5). In other cases than the above, perform (7).
If a message ID is displayed, refer to Maintenance Tool "2.21.2.3 Command termination messages and action to be taken" (MNTT 02-1460).
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
Take appropriate action and perform step (3) and later again.

```
$ sudo dumpdel
KAQM38004-Q Do you want to delete all converted dump files? (y/n) y
```

Figure 2.21.2.2-2 Confirmation Message (KAQM38004-Q) to be Displayed When dumpdel Is Executed

```
$ sudo dumpdel
KAQM38004-Q Do you want to delete all converted dump files? (y/n) y
KAQM38021-I Dump files will now be converted. Conversion will take about 30
minutes.
```

Figure 2.21.2.2-3 Confirmation Message (Dump file creation) to be Displayed When dumpdel Is Executed

```
$ sudo dumpdel
KAQM38004-Q Do you want to delete all converted dump files? (y/n) y
KAQM38021-I Dump files will now be converted. Conversion will take time.
```

Figure 2.21.2.2-4 Confirmation Message (Dump file creation) to be Displayed When dumpdel Is Executed

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(5) After executing (4), a dump file is created in the background. The completion of the dump file creation can be confirmed by displaying the SIM message of "KAQK39528-I Processing to convert dump files ended." (in the case the OS version is earlier than 3.1.0-XX) or "KAQK39539-I Conversion processing ended successfully for all the dump files" (in the case the OS version is 3.1.0-XX or later). For the SIM messages, refer to Maintenance Tool "2.6 Displaying SIMs on This Side (syseventlist)" (MNTT 02-0360).
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

(6) After collecting the created dump files, retry the operation from (2). For the method to collect dump file, refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420).

(7) Execute the ls command to check whether the files under "/dump/download/service/" and "/dump/download/all/" are deleted.

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2.21.2.3 Command termination messages and action to be taken

When you execute the dumpdel command, messages might be displayed. Table 2.21.2.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.21.2.3-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM38004-Q	Do you want to delete all dump files? (y/n)	Do you want to delete all the converted dump files?	If you want to delete the files, enter "y". If you want to cancel the processing, enter "n".
6	KAQM38021-I	Dump files will now be converted. Conversion will take time.	Because there are unconverted dump files, the dump file conversion is executed. (Different message is displayed if the OS version is before it than 3.0.1-XX.)	—

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2.21.3 Confirm the existence of unconverted dump file (dumpcheck)

This command checks if there are unconverted dump files or not. This command is available to execute only in the maintenance mode.

NOTE: This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.21.3.1 Command line

This command uses the following command lines.

- To confirm the existence of unconverted dump file:
  dumpcheck

- To display the command format on the standard output:
  dumpcheck -h

Table 2.21.3.1-1 shows the description of each option.

Table 2.21.3.1-1 Description of the Options

No.	Option	Description	Remark
1	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.21.3.2 Output format

The output format for the licenselist command execution is shown in Figure 2.31.2-1 “Output Format for dumpcheck Command”.

```
Output format for dumpcheck

(When the OS version is earlier than 3.1.0-XX)
  Unconvert dump file : [existence or not existence of dump files]

(When the OS version is 3.1.0-XX or later)
  Unconvert dump file count : [number of unconverted dump files]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.21.3.2-1 Output Format for dumpcheck Command

Table 2.21.3.2-1 describes the details about the items in “Figure 2.21.3.2-1 Output Format for dumpcheck Command”

Table 2.21.3.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[existence or not existence of dump files]	Exist : There are dump files. Not exist : There are no dump files.
2	[number of unconverted dump files]	Displays the number of unconverted dump files. 0 is displayed if no unconverted dump file exists.

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2.21.3.3 Execution procedure

This subsection describes the procedure for executing the dumpcheck command.

(1) Start the node to be operated in the maintenance mode. To start in the maintenance mode, refer to "Set Up '6.3 Maintenance Mode' (SETUP 06-0050)".

(1-1) In the single node configuration, the port position to be connected LAN cable of maintenance PC will be changed after starting up with the maintenance mode. refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Confirm if there are converted dump file or not, and when they exist, collect the dump files. Refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420), and execute from the step (3).

(4) Execute dumpcheck command. If the OS version is earlier than 3.1.0-XX and there are unconverted dump files, Figure 2.21.3.3-1 is displayed. If there are no unconverted dump files, Figure 2.21.3.3-2 is displayed.
If the OS version is 3.1.0-XX or later and there are unconverted dump files, Figure 2.21.3.3-3 is displayed. If there are no unconverted dump files, Figure 2.21.3.3-4 is displayed.
When a message ID is displayed, take measures with reference to Maintenance Tool "2.21.3.4 Command termination messages and action to be taken" (MNTT 02-1463).
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
After completing the measures, retry the operation.

```
$ sudo dumpcheck
Unconvert dump file: Exist
```

Figure 2.21.3.3-1 Execution Example of the dumpcheck Command (When the OS version is earlier than 3.1.0-XX and there are unconverted dump files)

```
$ sudo dumpcheck
Unconvert dump file: Not exist
```

Figure 2.21.3.3-2 Execution Example of the dumpcheck Command (When the OS version is earlier than 3.1.0-XX and there are no unconverted dump files)

```
$ sudo dumpcheck
Unconvert dump file count : 2
```

Figure 2.21.3.3-3 Execution Example of the dumpcheck Command (When the OS version is 3.1.0-XX or later and there are unconverted dump files)

```
$ sudo dumpcheck
Unconvert dump file count : 0
```

Figure 2.21.3.3-4 Execution Example of the dumpcheck Command (When the OS version is 3.1.0-XX or later and there are no unconverted dump files)

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(5) If there are unconverted dump files, convert the dump files. For the details of dump file conversion, refer to Maintenance Tool "2.21.4 Converting dump file (dumpconvert)" (MNTT 02-1464).
If there are no unconverted dump files, terminate the maintenance mode. For the details of terminating maintenance mode, refer to "Set Up '6.3.3 Maintenance mode termination' (SETUP 06-0090)".

(6) In the single node configuration, the LAN Cable re-connection may be needed after terminating maintenance mode.
For detail, refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

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2.21.3.4 Command termination messages and action to be taken

When you execute the dumpcheck command, a message might be displayed. Table 2.21.3.4-1 lists the action to be taken for each message ID.

Table 2.21.3.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.21.4 Converting dump file (dumpconvert)

This command converts the unconverted dump files. This is available to execute in the maintenance mode.

NOTE: This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.21.4.1 Command line

This command uses the following command lines.

- To convert the dump file:
  dumpconvert
- To display the command format on the standard output:
  dumpconvert -h

Table 2.21.4.1-1 shows the description of each option.

Table 2.21.4.1-1 Description of the Options

No.	Option	Description	Remark
1	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.21.4.2 Execution procedure

This subsection describes the procedure for executing the dumpconvert command.
If the OS version is earlier than 3.1.0-XX, refer to "(1) In case the OS version is earlier than 3.1.0-XX", if the OS version is 3.1.0-XX or later, refer to Maintenance Tool "2.21.4.2 (2) In case the OS version is 3.1.0-XX or later" (MNTT 02-1465A).
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

(1) In case the OS version is earlier than 3.1.0-XX

(a) Start a node to be operated in maintenance mode. To start in the maintenance mode, refer to "Set Up '6.3 Maintenance Mode' (SETUP 06-0050)".
This procedure is unnecessary if the maintenance mode is already started.

(b) In the single node configuration, the port position to be connected LAN cable of maintenance PC will be changed after starting up with the maintenance mode.
Refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

(c) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(d) Execute dumpconvert command as shown in Figure 2.21.4.2-1. Unconverted dump files are converted. While executing dump conversion, "."(dot) is displayed. And a prompt is returned after completed the dump file conversion.
When the message ID is displayed, take measures with reference to Maintenance Tool "2.21.4.3 Command termination messages and action to be taken" (MNTT 02-1466).
After completing the measures, retry the operation.

```
$ sudo dumpconvert
.............................................................
...........................
```

Figure 2.21.4.2-1 Execution Example of the dumpconvert command

Also, Table 2.21.4.2-1 shows average processing time for dump file conversion as a guide. Note that actual process might take longer than this.

Table 2.21.4.2-1 Average processing time for dump file conversion as a guide

#	Deployment memory	Configuration	Dump file making completion time as a guide
1	12GB	Single node	10 to 12 minutes
2	6GB	Cluster node	3 to 5 minutes
3	12GB		6 to 10 minutes

(e) Collect the dump files that are converted at step (d). Refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420), and execute the procedure from (3).

(f) Terminate the maintenance mode. For the details of maintenance termination, refer to "Set Up '6.3.3 Maintenance mode termination' (SETUP 06-0090)".

(g) In the single node configuration, the LAN Cable re-connection may be needed after terminating maintenance mode. For detail, refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

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(2) In case the OS version is 3.1.0-XX or later
When the OS version is 3.1.0-XX or later, the results of conversion of the Physical node is output as shown in Figure 2.21.4.2-2.

```
dumpconvert output format
.......................................................................................................
.......................................................................................................
..................................... [physical node(Date=<date and time of conversion>) result code = <processing result code>]

* The contents inside < > indicate the values acquired from the system.
```

Figure 2.21.4.2-2 dumpconvert Output Contents

Table 2.21.4.2-2 shows the dumpconvert output contents of Figure 2.21.4.2-2.

Table 2.21.4.2-2 Contents of the output format

No.	Item	Contents
1	Processing result code	Displays the code indicating the result of dump conversion processing. The processing result codes are shown in Table 2.21.4.2-3.
2	Date and time of conversion	Displays the date and time when dump processing is executed. Display format : YYYYMMDDhhmmss (year, month, day, hour, minute, and second)

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Table 2.21.4.2-3 Processing result codes and handling in the Physical node

No.	Processing result code	Contents	Handling
1	0	Normally terminated	—
2	2	Conversion processing is inhibited because there are dump files which are converted and not downloaded.	Collect and delete the converted dump files, and then retry the operation. For the method of dump file collection, refer to Maintenance Tool “2.21.1 Collecting dump files” (MNTT 02-1420).
3	4	Normal conversion failed but forced conversion succeeded.	Acquire permission from the system administrator and collect dump files of level 3 and 4. For the details of method for collecting dump files, refer to Maintenance Tool Maintenance Tool “2.21.1 Collecting dump files” (MNTT 02-1420).
4	5	Forced conversion failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
5	6	Memory image acquisition processing of the Virtual Server is being executed.	After waiting for a while, check whether converted dump files are created or not, and collect the dump files if created. For the method to collect dump files, refer to Maintenance Tool “2.21.1 Collecting dump files” (MNTT 02-1420).
6	7	Conversion processing is inhibited because of insufficient free capacity.	Collect and delete the converted dump files, and then retry the operation. For the method of dump file collection, refer to Maintenance Tool “2.21.1 Collecting dump files” (MNTT 02-1420).
7	99	Other types of internal errors	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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(a) Start a node to be operated in maintenance mode. To start in the maintenance mode, refer to "Set Up '6.3 Maintenance Mode' (SETUP 06-0050)".
This procedure is unnecessary if the maintenance mode is already started.

(b) In the single node configuration, the port position to be connected LAN cable of maintenance PC will be changed after starting up with the maintenance mode.
For details , refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

(c) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(d) Execute dumpconvert command as shown in Figure 2.21.4.2-3. Unconverted dump files are converted. While executing dump conversion, "."(dot) is displayed. And a result code is returned after completed the dump file conversion of the Physical node.
When the result code is other than "0", take measures with reference to Figure 2.21.4.2-2 or Figure 2.21.4.2-3.
Conversion is executed same times as the number outputted by dumpcheck command. For dumpcheck command, refer to Maintenance Tool "2.21.3 Confirm the existence of unconverted dump file (dumpcheck)" (MNTT 02-1461).
When the message ID is displayed, take measures with reference to Maintenance Tool "2.21.4.3 Command termination messages and action to be taken" (MNTT 02-1466).
After completing the measures, retry the operation.

```
$ sudo dumpconvert
..................................................... .............
.......................[physical node(Date=20110612211501) result code = 0]
```

Figure 2.21.4.2-3 Execution Example of the dumpconvert Command

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Also, Table 2.21.4.2-5 shows average processing time for dump file conversion as a guide. Note that actual process might take longer than this.

Table 2.21.4.2-5 Average processing time for dump file conversion as a guide

#	Deployment memory	Configuration	Dump file making completion time as a guide
1	6GB	Single node	5 to 8 minutes
2	12GB		10 to 12 minutes
3	16GB		12 to 20 minutes
4	6GB	Cluster node	3 to 5 minutes
5	12GB		6 to 10 minutes
6	16GB		9 to 15 minutes

(e) Collect the dump files that are converted at step (d). Refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420), and execute the procedure from (3).

(f) Terminate the maintenance mode. For the details of maintenance termination, refer to "Set Up '6.3.3 Maintenance mode termination' (SETUP 06-0090)".

(g) In the single node configuration, the LAN Cable re-connection may be needed after terminating maintenance mode. For detail, refer to "Set Up '6.3.4 Port Notation when using maintenance mode' (SETUP 06-0100)".

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2.21.4.3 Command termination messages and action to be taken

When you execute the dumpconvert command, a message might be displayed. Table 2.21.4.3-1 lists the action to be taken for each message ID.

Table 2.21.4.3-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM38022-E	Dump file conversion was suppressed because converted dump files exist.	Dump file conversion was inhibited because converted dump files exist.	Collect and delete the converted dump files, and then retry the operation. For the method of dump file collection, refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420).
5	KAQM38023-E	Unconvert dump files does not exist.	Unconvert dump files does not exist.	Check if there are converted dump files or not. If there are, collect the dump file. For the method to collect dump files, refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420).
6	KAQM38024-E	The dump files are already being converted.	The dump files are already being converted.	Wait for a while, and make sure that the dump file conversion is completed. For the method to collect dump files, refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420).
7	KAQM38025-E	Dump file conversion has failed.	Dump file conversion has failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM38026-W	Forced conversion of the dump files is complete.	Forced conversion of the dump files is complete.	Collect and delete the converted dump files, and then retry the operation. For the method of dump file collection, refer to Maintenance Tool "2.21.1 Collecting dump files" (MNTT 02-1420).

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2.22 Collecting the BMC System Event Log (bmcselget)

The command collects the system event log (SEL) of the BMC in the failed node from the normal node.

NOTE:
- Do not use this command to collect the system event log unless otherwise instructed to do so.
- This is not supported in the single node configuration.

2.22.1 Command line

This command uses the following command lines.

- To collect the BMC SEL:
  bmcselget

- To display the command format on the standard output:
  bmcselget -h

Table 2.22.1-1 shows the description of each option.

Table 2.22.1-1 Description of the Option

No.	Option	Description	Remark
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.22.2 Execution procedure

This subsection describes the procedure for executing the bmcselget command.

(1) Log in to the node different from the node that the target to acquire SEL via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the bmcselget command as shown in "Figure 2.22.2-1 Example of Executing bmcselget".
If a message ID is displayed, refer to Maintenance Tool "2.22.3 Command termination messages and action to be taken" (MNTT 02-1490).
Perform a propter action and execute the command again.

```
$ sudo bmcselget
```

Figure 2.22.2-1 Execution Example of the bmcselget Command

(3) As shown in Figure 2.22.2-2, execute a file transfer command on the command prompt of the maintenance PC to download the SEL collected in step (2). Because the files are transferred to the home directory for maintenance personnel (/home/service), you only need to specify the file names.
For details about file transfer, refer to Maintenance Tool "1.3.5 Commands used for transferring files (2) Downloading files to the maintenance PC" (MNTT 01-0240).
The following figure shows an example of using pscp.

```
C:\>pscp -scp -unsafe service@10.0.0.50:sel_* C:\work
```

Figure 2.22.2-2 Downloading the SEL to the Maintenance PC

The format of the SEL to be collected is as follows:
sel_service-tag-ID-of-execution-node_YYYYMMDDhhmmss.log
YYYYYMMDDhhmmss: Year, month, day, hour, minute, and second

(4) As shown in Figure 2.22.2-3, delete the SEL downloaded in step (3).
For details about how to delete a file, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$ sudo rmfile sel_*
```

Figure 2.22.2-3 Deleting the downloaded Files

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2.22.3 Command termination messages and action to be taken

When you execute the bmcselget command, messages might be displayed. Table 2.22.3-1 lists the action to be taken for each message ID.

Table 2.22.3-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
5	KAQM38005-E	An attempt to execute the ipmitool command failed. (ipmitool error message = <*ipmitool error message*>)	Execution of ipmitool failed.	Take appropriate action according to the error message for ipmitool.
6	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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2.23 Controlling FC Paths (fpctl)

The command performs the following:

- Sets/Displays “Enable/Disable” of automatic online switching of paths.
- Sets/Displays “Enable/Disable” of load balancing function.
- Sets and displays the interval of path health checking.

NOTE:
- Do not use this command to control FC paths unless otherwise instructed to do so.
- This command is not supported in the single node configuration not connected to the disk array subsystem.

2.23.1 Command line

This command uses the following command lines. Select the command line to use depending on the maintenance requirement.

- To enable/disable automatic online switching of paths:
  fpctl -e auto-online [--on | --off]
- To enable/disable load balancing function:
  fpctl -e load-balance [--on [--type {exlio|rr|exrr}]| --off] [-y]
- To set/display the interval of path health checking:
  fpctl -e health-check-interval [time]
- To display the command format on the standard output:
  fpctl –h

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Table 2.23.1-1 describes the options.

Table 2.23.1-1 Description of the Options

No.	Option	Description	Remark
1	-e	The following functions can be specified. - Setting and displaying automatic online switching. auto-online - Setting and displaying the load balancing function. load-balance - Setting and displaying the intervals of path health checking. health-check-interval	When specifying only this option, the current setting value is displayed. Automatic online switching: The default is “Off”. Load Balancing function: The default is “On (extended lio)”. Path health checking: The default is “30”, and the unit is “minute”.
2	--on | --off	Specify a value for the automatic online function or the load balancing function specified at the –e option. --When it is on, the function is enabled. --when it is off, the function is disabled.	
3	--type { exlio|rr|exrr }	Select an algorithm of load balancing.	Minimum number of extended I/Os: exlio Round robin: rr Extended round robin: exrr If you omit this option, the default setting (minimum number of extended I/Os) is selected.
4	-y	Specify this option when you disable load balancing and inhibit the output of confirmation messages.	Do not append this option unless otherwise instructed to do so.
5	[time]	Specify an interval of path health checking in minutes. The unit is “minute”.	You can specify a value in the range from 1 to 1440.
6	-h	Output the command format to the standard output.	KAQM14136-I is displayed when executing this option.

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2.23.2 Execution procedure

This subsection describes the procedure for executing the fpctl command.
If you want to enable or disable automatic online switching of paths, refer to 2.23.2 (1) Enabling and disabling automatic online switching of paths.
If you want to enable or disable load balancing, refer to Maintenance Tool "2.23.2 (2) Setting enabling and disabling of load balancing function" (MNTT 02-1530).
If you want to specify the interval of path health checking, refer to Maintenance Tool "2.23.2 (3) Setting the interval of path health checking" (MNTT 02-1550).
If you want to display the current settings, refer to Maintenance Tool "2.23.2 (4) Displaying current settings" (MNTT 02-1560).

(1) Enabling and disabling automatic online switching of paths

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) In accordance with "Figure 2.23.2-1 Example of Executing fpctl", to enable automatic online switching of paths, add the "--on" option to the fpctl command. To disable automatic online switching, add the "--off" option to the command. Then execute the fpctl command.
If a message ID is displayed, refer to Maintenance Tool "2.23.3 Command termination messages and action to be taken" (MNTT 02-1580).
Perform a propter action and execute the command again.

```
[For enabling automatic Online switching of paths]
$ sudo fpctl -e auto-online –-on

[For disabling automatic Online switching of paths]
$ sudo fpctl -e auto-online --off
```

Figure 2.23.2-1 Execution Example of the fpctl Command

(c) After you complete the settings, use the fpctl command to check the settings. For details about how to use the fpctl command to check the settings, refer to Maintenance Tool "2.23.2 (4) Displaying current settings" (MNTT 02-1560).

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(2) Setting enabling and disabling of load balancing function

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) In accordance with "Figure 2.23.2-2 execution example of fpctl command", to enable load balancing, add the "--on" option to the fpctl command. To disable load balancing, add the "--off" option to the command. Then execute the fpctl command.
When you enable load balancing, specify its algorithm. If you do not specify an algorithm, the minimum number of extended I/Os is set by default.
If a message ID is displayed, refer to Maintenance Tool "2.23.3 Command termination messages and action to be taken" (MNTT 02-1580).
Perform a propter action and execute the command again.

```
[For enabling load balancing function (algorithm: minimum number of extended I/Os)]
$ sudo fpctl -e load-balance --on [--type exlio(omissible)]

[For enabling load balancing function (algorithm: round robin)]
$ sudo fpctl -e load-balance --on --type rr

[For enabling load balancing function (algorithm: extended round robin)]
$ sudo fpctl -e load-balance --on --type exrr

[For disabling load balancing system]
$ sudo fpctl –e load-balance --off
```

Figure 2.23.2-2 Execution Example of the fpctl Command

NOTE: When you execute the command with the "-y" option, load balancing is disabled and no confirmation message is displayed. Do not add the "-y" option unless otherwise instructed to do so.

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(c) If you have enabled load balancing in step (b), perform step (d). If you have disabled load balancing, the confirmation message (KAQM32038-Q) shown in Figure 2.23.2-3 is displayed. Enter y to disable load balancing.
When you enter n, disabling of load balancing is canceled.
If a message ID is displayed, refer to Maintenance Tool "2.23.3 Command termination messages and action to be taken" (MNTT 02-1580).
Take appropriate action and perform step (b) and later again.

```
$ sudo fpctl -e load-balance --off
KAQM32038-Q Performance might decrease when the load-balance function is
disabled. Do you still want to change the setting? (y/n) y
```

Figure 2.23.2-3 Confirmation Message (KAQM32038-Q) to be Displayed When fpctl Is Executed

(d) After you complete the settings, use the fpctl command to check the settings. For details about how to use the fpctl command to check the settings, refer to Maintenance Tool "2.23.2 (4) Displaying current settings" (MNTT 02-1560).

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(3) Setting the interval of path health checking

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) In accordance with "Figure 2.23.2-4 Example of Executing fpctl", to set the interval of path health checking, specify the interval as the option and execute the fpctl command.
If a message ID is displayed, refer to Maintenance Tool "2.23.3 Command termination messages and action to be taken" (MNTT 02-1580).
Perform a propter action and execute the command again.

```
$ sudo fpctl -e health-check-interval 100
```

Figure 2.23.2-4 Execution Example of the fpctl Command

(c) After you complete the settings, use the fpctl command to check the settings. For details about how to use the fpctl command to check the settings, refer to Maintenance Tool "2.23.2 (4) Displaying current settings" (MNTT 02-1560).

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(4) Displaying current settings
The output format for the fpctl command execution is shown in Figure 2.23.2-5 “Output Format for fpctl Command”.

```
Output format for fpctl

For displaying the setting of automatic online switching of paths
$ sudo fpctl -e auto-online
[On/Off]

For displaying the setting of load balancing function
$ sudo fpctl -e load-balance
[On/Off][( load-balancing-algorithm)]

For displaying the interval of path health checking
$ sudo fpctl -e health-check-interval
[time]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.23.2-5 Output Format for fpctl Command

Table 2.23.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[On/Off]	[On] is displayed when the function is currently enabled. [Off] is displayed when the function is currently disabled.
2	[(load-balancing-algorithm)]	On (extended lio) : Load balancing is enabled with the minimum number of extended I/Os as the algorithm. On (round-robin) : Load balancing is enabled with round robin as the algorithm. On (extended round-robin): Load balancing is enabled with extended round robin as the algorithm.
3	[time]	Displays the current interval of path health checking. The unit is “minute”.

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Execute the fpctl command according to the following procedure.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the fpctl command in accordance with Figure 2.23.2-6. The current setting information is displayed.
If a message ID is displayed, refer to Maintenance Tool "2.23.3 Command termination messages and action to be taken" (MNTT 02-1580).
Perform a propter action and execute the command again.

```
[The setting of automatic online switching of paths]
$ sudo fpctl -e auto-online
Off

[The setting of load balancing]
$ sudo fpctl -e load-balance
On(extended lio)

[The interval of path health checking]
$ sudo fpctl -e health-check-interval
100
```

Figure 2.23.2-6 Execution Example of the fpctl Command

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2.23.3 Command termination messages and action to be taken

When you execute the fpctl command, messages might be displayed. Table 2.23.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.23.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
3	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*)..	An error exists in the parameter.	Specify the correct parameter and execute the command again.
4	KAQM14134-E	An error occurred in the shared processing of commands. (Error = *<error>*)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—
6	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
7	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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Table 2.23.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
8	KAQM32017-E	An attempt to set the environment of the FC path has failed.	An attempt to configure the environment setting of the FC paths failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM32018-E	An attempt to acquire information about the environment settings of the FC path has failed.	An attempt to acquire the environment settings of FC paths failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM32038-Q	Performance might decrease when the load-balance function is disabled. Do you still want to change the setting? (y/n)	Performance might degrade if you disable the load balancing. Do you want to change the setting?	To change the setting, enter "y". To cancel, enter "n".
11	KAQM32039-E	A system error occurred.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
12	KAQM32042-E	The value specified for the path health check interval is outside the valid range. (path health check interval = <*path health check interval*>)	The specified interval of path health checking is outside the range.	Specify the interval of path health checking in the range from 1 to 1440 and execute the command again.

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2.24 Checking the HBA Firmware Version (fchbafwlist)

The command displays the version information of the installed Fibre Channel HBA firmware for each port.

NOTE:
- This command is not supported in the single node configuration not connected to the disk array subsystem.
- This command is not supported in the configuration in which different types of HBAs are used on a single device.

2.24.1 Command line

This command uses the following command lines.

- To check the firmware version:
  fchbafwlist

- To display the command format on the standard output:
  fchbafwlist -h

Table 2.24.1-1 shows the description of each option.

Table 2.24.1-1 Description of the Option

No.	Option	Description	Remark
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.24.2 Output format

The output format for the fchbafwlist command execution is shown in Figure 2.24.2-1 “Output Format for fchbafwlist Command”.

```
Output format for fchbafwlist

HBA type   :[HBA type]   }
Portname   :[Portname]   } Repeat for the number of the ports
Version    :[Version]    }

  *: Values acquired from the system are displayed within [  ]
```

Figure 2.24.2-1 Output Format for fchbafwlist Command

Table 2.24.2-1 describes the details about the items in “Figure 2.24.2-1 Output Format for fchbafwlist Command”.

Table 2.24.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[HBA type]	Displays the type of the HBA being used. In the case of Emulex HBA: Emulex In the case of Hitachi HBA: Hitachi
2	[Portname]	Displays the port name (WWPN) recognized by the driver. Example: 10:00:00:00:c9:8d:b6:5a
3	[Version]	Displays the version of the Fibre Channel HBA firmware. e.g. (in the case of Emulex HBA): 1.11A5 (U3D1.11A5), sli-3 e.g. (in the case of Hitachi HBA): b1380456 (a 6-to-8-digit hexadecimal number. Alphabetical characters are displayed in lower-case letters)

2.24.3 Execution procedure

This subsection describes the procedure for executing the fchbafwlist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) Examples of the fchbafwlist command execution are shown in Figure 2.24.3-1 and Figure 2.24.3-2.
When a message ID is displayed, refer to Maintenance Tool “2.24.4 Command termination messages and action to be taken” (MNTT 02-1620).
Perform a propter action and execute the command again.

```
$sudo fchbafwlist
HBA type:Emulex
Portname:10:00:00:00:c9:8d:b6:5a
Version:1.11A5 (U3D1.11A5), sli-3

Portname:10:00:00:00:c9:8d:b6:5b
Version:1.11A5 (U3D1.11A5), sli-3
```

Figure 2.24.3-1 Execution Example of the fchbafwlist Command (in the case of Emulex HBA)

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```
$ sudo fchbafwlist
HBA type:Hitachi
Portname:50:00:08:70:00:53:c1:a0
Version:380468

Portname:50:00:08:70:00:53:c1:a2
Version:380468
```

Figure 2.24.3-2 Execution Example of the fchbafwlist Command (in the case of Hitachi HBA)

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2.24.4 Command termination messages and action to be taken

When you execute the fchbafwlist command, messages might be displayed. Table 2.24.4-1 lists the action to be taken for each message ID.

Table 2.24.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
4	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM38010-E	The firmware information could not be acquired.	The firmware information could not be acquired.	Check that HBA card is installed. When the OS version is 4.0.0-XX or later, you can confirm it by executing the fpioctl command. For detail of the fpioctl command , refer to Maintenance Tool "2.38 Configuring the FC Path I/O-Related Parameters (fpioctl)" (MNTT 02-2220.) If it is installed, execute the fchbafwlist command again. When the error occurs again, a failure might have occurred on the hardware. Execute "C.2.2 Determination Procedure when a Failure Occurred" to determine the failure.

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2.25 Updating the HBA Firmware (fchbafwupdate)

The command uses the firmware file stored in the home directory for maintenance personnel (/home/service) to update the Fibre Channel HBA firmware.

NOTE:
- This command is not supported in the single node configuration not connected to the disk array subsystem.
- This command is not supported in the configuration in which different types of HBAs are used on a single device.
- Hitachi HBA needs rebooting of nodes after executing this command.
- For the OS version 5.1.1-XX and later, the firmware update of Emulex HBA is not supported. Refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060) to verify the OS version.

2.25.1 Command line

This command uses the following command lines.

- To update the firmware:
  fchbafwupdate firmware-file-name

- To display the command format on the standard output:
  fchbafwupdate -h

Table 2.25.1-1 shows the description of each option.

Table 2.25.1-1 Description of the Options

No.	Option	Description	Remark
1	firmware-file-name	Specify the file for updating the firmware.	—
2	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.25.2 Execution procedure

This subsection describes the procedure for executing the fchbafwupdate command.

NOTE:
- Obtain the firmware update file and store it on the maintenance PC in advance.
- Refer to Maintenance Tool "2.40 Checking the Installation Status of External Programs (externalpgmlist)" (MNTT 02-2330) and check whether HBAnyware is installed. If HBAnywhere is not installed, refer to Maintenance Tool "2.39 Installing an External Program (externalpgminst)" (MNTT 02-2290), install HBAnywhere, and execute the command.

The procedures vary by the Emulex HBA or Hitachi HBA.
When it is unclear that one is either one of the FC-HBAs, execute the fchbafwlist command to confirm the type of the FC-HBA.
For the fchbafwlist command, refer to Maintenance Tool "2.24 Checking the HBA Firmware Version (fchbafwlist)" (MNTT 02-1600).

The Emulex HBA goes to the procedure (1) and Hitachi HBA goes to the procedure (2).

(1) Firmware update procedure for the Emulex HBA

(a) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.25.2-1 to upload the firmware file to the home directory for maintenance personnel (/home/service).
For details about file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
The following figure shows an example of using pscp.

```
C:\>pscp -scp -unsafe C:\work\ud111a5.all service@10.0.0.50:
```

Figure 2.25.2-1 Uploading the Firmware File to the Home Directory for Maintenance Personnel

(b) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(c) Execute the fchbafwlist command to confirm the current firmware version.
For details about the fchbafwlist command, refer to Maintenance Tool "2.24 Checking the HBA Firmware Version (fchbafwlist)" (MNTT 02-1600).

(d) In accordance with "Figure 2.25.2-2 Example of Executing fchbafwupdate", add the name of the file uploaded in step (a) to the fchbafwupdate command as the option and execute the command.
If a message ID is displayed, refer to Maintenance Tool "2.25.3 Command termination messages and action to be taken" (MNTT 02-1650).
After you complete the action, perform step (1) and later again.

```
$sudo fchbafwupdate ud111a5.all
```

Figure 2.25.2-2 Execution Example of the fchbafwupdate Command

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(e) After updating is completed, execute the fchbafwlist command to confirm the current firmware version.
When the version after the update can be known by an explanation document etc., confirm if the version matches.
When the version is unknown, confirm that the version is different from the firmware version checked in the procedure (c).
For details about the fchbafwlist command, refer to Maintenance Tool "2.24 Checking the HBA Firmware Version (fchbafwlist)" (MNTT 02-1600).

(f) As shown in Figure 2.25.2-3, delete the firmware file uploaded in step (1).
For details about how to delete a file, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$sudo rmfile ud111a5.all
```

Figure 2.25.2-3 Deleting the Uploaded File

(2) Firmware update procedure for the Hitachi HBA

(a) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.25.2-4 to upload the firmware file to the home directory for maintenance personnel (/home/service).
For details about file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
The following figure shows an example of using pscp.

```
C:\>pscp -scp -unsafe C:\work\ud111a5.all service@10.0.0.50:
```

Figure 2.25.2-4 Uploading the Firmware File to the Home Directory for Maintenance Personnel

(b) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(c) Execute the fchbafwlist command to confirm the current firmware version.
For details about the fchbafwlist command, refer to Maintenance Tool "2.24 Checking the HBA Firmware Version (fchbafwlist)" (MNTT 02-1600).

(d) In accordance with "Figure 2.25.2-2 Example of Executing fchbafwupdate", add the name of the file uploaded in step (a) to the fchbafwupdate command as the option and execute the command.
If a message ID is displayed, refer to Maintenance Tool "2.25.3 Command termination messages and action to be taken" (MNTT 02-1650).
After you complete the action, perform step (a) and later again.

```
$ sudo fchbafwupdate ud111a5.all
```

Figure 2.25.2-5 Execution Example of the fchbafwupdate Command

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(e) Reboot the OS. For rebooting, refer to Maintenance Tool “2.29 Rebooting the OS of This Side Node (nasreboot)” (MNTT 02-1790).

(f) After rebooting the OS, log in to the execution node by ssh from the Maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(g) After updating is completed, execute the fchbafwlist command to confirm the current firmware version.
When the version after the update can be known by an explanation document etc., confirm if the version matches.
When the version is unknown, confirm that the version is different from the firmware version checked in the procedure (c).
For details about the fchbafwlist command, refer to Maintenance Tool “2.24 Checking the HBA Firmware Version (fchbafwlist)” (MNTT 02-1600).

(h) As shown in Figure 2.25.2-6, delete the firmware file uploaded in step (a).
For details about how to delete a file, refer to Maintenance Tool “2.26 Deleting the Specified File (rmfile)” (MNTT 02-1660).

```
$ sudo rmfile ud111a5.all
```

Figure 2.25.2-6 Deleting the Uploaded File

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2.25.3 Command termination messages and action to be taken

When you execute the fchbafwupdate command, messages might be displayed. Table 2.25.3-1 lists the action to be taken for each message ID.

Table 2.25.3-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—
2	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
3	KAQM14165-E	The specified file does not exist in the home directory. (file name = *<file-name>*)	The specified file does not exist in the home directory.	Upload the file to the home directory (/home/service) and execute the command again. If the same error occurs when you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
4	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
5	KAQM38002-E	An attempt to update a firmware failed.	The firmware update failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	
7	KAQM38010-E	The firmware information could not be acquired.	The firmware information could not be acquired.	Check that HBA card is installed. When the OS version is 4.0.0-XX or later, you can confirm it by executing the fpioctl command. For detail of the fpioctl command , refer to Maintenance Tool "2.38 Configuring the FC Path I/O-Related Parameters (fpioctl)" (MNTT 02-2220.) If it is installed, execute the fchbafwlist command again. When the error occurs again, a failure might have occurred on the hardware. Execute "C.2.2 Determination Procedure when a Failure Occurred" to determine the failure.
8	KAQM38011-E	The program HBAnywhere, which is required for the firmware update, is not installed.	The program HBAnywhere, which is required for the firmware update, is not installed.	Install the program required for updating the firmware (HBAnywhere) and execute the command again. For details, refer to Maintenance Tool "2.39 Installing an External Program (externalpgminst)" (MNTT 02-2290).

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2.26 Deleting the Specified File (rmfile)

The command deletes the specified file. The command can delete the files that are directly under the home directory for maintenance personnel (/home/service).
Use this command to delete the files that are mistakenly uploaded to the home directory for maintenance personnel or delete specific files according to instructions.

2.26.1 Command line

This command uses the following command lines.

- To delete a file:
  rmfile [-y] [--] file-name

- To display the command format on the standard output:
  rmfile -h

Table 2.26.1-1 describes the options.

Table 2.26.1-1 Description of the Options

No.	Option	Description	Remark
1	-- (omissible)	Add this option before the file name when the file name begins with "-". Note that even if you add this option before the file name that does not begin with "-", the file is deleted.	—
2	file-name	Specify the name of the target file directly under the home directory for maintenance personnel (/home/service).	If the file name contains a space, enclose the file name between double quotation marks (""") when you specify it. You cannot specify full paths and relative paths. In addition, you cannot specify a character string containing (/), (|), (*), (?), (<), (>), (\), (:) and ("), and a character string consisting only of (.) or (..).
3	-y	Delete the specified file without outputting the confirmation message of whether to delete the file or not.	Do not execute this option unless other wide instructed to do so.
4	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.26.2 Execution procedure

This subsection describes the procedure for executing the rmfile command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) In accordance with "Figure 2.26.2-1 Example of Executing rmfile", specify the file to be deleted and execute the rmfile command.
If a message ID is displayed, refer to Maintenance Tool "2.26.3 Command termination messages and action to be taken" (MNTT 02-1680).
Perform a propter action and execute the command again.

```
$ sudo rmfile ssh-key-service.pub
```

Figure 2.26.2-1 Execution Example of the rmfile Command

NOTE: You must specify the target file name correctly.

(3) When step (2) is executed, a confirmation message is displayed in Figure 2.26.2-2 "Confirmation Message (KAQM16173-Q) to be Displayed when rmfile is Executed". Enter "y" to start execution. File deletion process is executed.
To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.26.3 Command termination messages and action to be taken" (MNTT 02-1680).
Repeat the procedure from the step (2) after completing the action.

```
$ sudo rmfile ssh-key-service.pub
KAQM16173-Q Do you want to delete the specified file? (y/n) y
```

Figure 2.26.2-2 Confirmation Message (KAQM16173-Q) to be Displayed when rmfile is Executed

(4) Execute the ls command and confirm that the specified file is deleted.

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2.26.3 Command termination messages and action to be taken

When you execute the rmfile command, messages might be displayed. Table 2.26.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.26.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
2	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—
4	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
5	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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Table 2.26.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
5	KAQM16095-E	A character that cannot be used for the specified file is entered.	The specified file name is invalid.	Check the file name and execute the command again.
6	KAQM16099-E	The specified file does not exist in the home directory. (file name = <*file name*>)	The specified file does not exist in the home directory.	Check whether the specified file exists in the home directory.
7	KAQM16100-E	The specified file cannot be deleted because it is a directory. (file name = <*file name*>)	The specified file name is a directory, not a file.	Specify a valid file name and execute the command again.
8	KAQM16101-E	The specified file cannot be deleted because it is a system file. (file name = <*file name*>)	The specified file name indicates a system file and the file cannot be deleted.	
9	KAQM16041-E	An attempt to execute the command (<*command*>) failed.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM16173-Q	Do you want to delete the specified file? (y/n)	Do you want to delete the specified file? (y/n)	If you want to delete the file, enter "y". If you want to cancel the processing, enter "n".

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2.27 Starting the OS of the Other Side Node (nasboot)

The command starts the OS of the other side node. You can execute this command after a cluster is created.

NOTE: This is not supported in the single node configuration.

2.27.1 Command line

This command uses the following command lines.

- To start the OS of the other side node:
  nasboot

- To display the command format on the standard output:
  nasboot -h

Table 2.27.1-1 describes the option.

Table 2.27.1-1 Description of the Option

No.	Option	Description	Remark
1	-h	Specify this option to output the command format to the standard output.	KAQM25301-I is displayed at the execution time.

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2.27.2 Execution procedure

This subsection describes the procedure for executing the nasboot command.

(1) Check whether the OS of the other side node is terminated. To check, request the system administrator to check whether the OS on the other side node is terminated, whether the power indicator on the other side node is turned off, or execute peerstatus command from this side node, and see if the node status is [OFF].
For details about how to check node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).

(2) Log in to the node different from the node that starts via ssh from the maintenance PC. For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

NOTE: Confirm that you log in to the correct node. To starts node 0, log in to node 1. To starts node 1, log in to node 0.
To check which node you are logged into, execute the clstatus command. The first node that is displayed is the node you are currently logged into. For details about clstatus, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(3) Execute the nasboot command in accordance with "Figure 2.27.2-1 Example of Executing nasboot".
If a message ID is displayed, refer to Maintenance Tool "2.27.3 Command termination messages and action to be taken" (MNTT 02-1720) and take appropriate action.
After you complete the action, perform step (1) and later again.

```
$ sudo nasboot
```

Figure 2.27.2-1 Execution Example of the nasboot Command

(4) Request the system administrator to check whether the OS is started or execute peerstatus command from the other side node to check whether the node status is [BOOT COMPLETE].
For details about how to check node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).

NOTE: This command does not check whether the OS is successfully started. After you execute the command, confirm that you check whether the OS is started.

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2.27.3 Command termination messages and action to be taken

When you execute the nasboot command, messages might be displayed. Table 2.27.3-1 lists the action to be taken for each message ID.

Table 2.27.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message “Management IP address is not set” is not output.
2	KAQM14150-E	An error occurred in the system.	The processing for determining the execution environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
3	KAQM25301-I	Usage:<*command-syntax*>	Output of the command format.	—
4	KAQM25304-E	There is an error in the specification of an option or parameter (<*option or parameter*>).	A parameter or an option is incorrect.	Specify the correct option or parameter, and execute the command again.
5	KAQM25399-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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Table 2.27.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
6	KAQM25416-E	The OS cannot be started because communication with BMC on the other node in the cluster cannot be established.	The OS cannot be started because the communication with the BMC in the other node in the cluster cannot be established.	In the case of the BMC and Management SW connection configuration, check whether the Management port and the BMC port belong to the same network segment. If the two ports belong to different network segments, make changes so they belong to the same network segment. In the case of the BMC direct connection configuration, check whether the Management port and the BMC port belong to the different network segment. If the two ports belong to the same network segments, make changes so they belong to the different network segment. To change the network segment of the Management port, refer to Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840). To change the network segment of the BMC port, refer to Maintenance Tool "2.18 Setting BMC LAN Information (bmcctl)" (MNTT 02-1210). If the network segment settings are correct for each configuration, check whether a failure occurred in the network. If a failure has occurred, correct it and execute the command again.

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2.28 Terminating the OS of This Side Node (nasshutdown)

The command terminates the OS of this side node.

2.28.1 Command line

This command uses the following command lines.

- To terminate the OS:
  nasshutdown [-f] [-q] [--force]

- To display the command format on the standard output:
  nasshutdown -h

Table 2.28.1-1 describes the options.

Table 2.28.1-1 Description of the Options

No.	Option	Description	Remark
1	-f	Specify this option to inhibit the output of confirmation messages.	Do not add these options unless otherwise instructed to do so.
2	-q	Specify this option to inhibit the output to the standard output and standard error output.	
3	--force	Stop the OS forcibly. However, it ends in an error when the clstatus command recognizes that “the status of this side node is UP” and “the status of the other side node is other than UP”.	For details about how to check node status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040). Specifying of this option is ignored in the single node configuration. Do not add this option unless otherwise instructed to do so.
4	-h	Specify this option to output the command format to the standard output.	KAQM25301-I is displayed at the execution time.

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2.28.2 Execution procedure

This subsection describes the procedure for executing the nasshutdown command.

NOTE:
- Confirm with the system administrator in advance whether the operation is performed in the Physical node. If it cannot be confirmed, refer to Maintenance Tool “3.4 Operation determination of the Physical node” (MNTT 03-0110) and determine the operational method.
- If a cluster is configured, request the system administrator to perform failover the resource group of the node to be stopped its OS, and to set the “Node Status” of the node to be stopped its OS to INACTIVE (stopping node).
  For the reference place in User’s Guide describing the details about failover/failback of a resource group, refer to “General ‘Reference Place in User's Guide for Operating Procedures Table 4 ‘Changing the execution node of a resource group’’ (GENE 00-0040)”, and for the reference place in User’s Guide describing the details about stopping a node, refer to “General ‘Reference Place in User's Guide for Operating Procedures Table 4 ‘Stopping and starting a node’’ (GENE 00-0040)”.
  When the system administrator is absent, the maintenance personnel should contact to system administrator and get the permission from him/her to execute this operation. For the execution procedure,
  refer to Maintenance Tool “3.1 Failover and Node Termination to Execute the OS stop or the OS reboot” (MNTT 03-0000).

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

NOTE: In the cluster configuration, confirm that you log in to the correct node. To check which node you are logged into, execute the clstatus command. The first node that is displayed is the node you are currently logged into. For details about clstatus, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

(2) In the cluster configuration, execute the clstatus command and check the status of the node with the OS you want to terminate. Check whether the node status is INACTIVE.
For details about how to check node status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

NOTE: Step (2) is not necessary when no cluster is created and in the single node configuration.

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(3) Execute the nasshutdown command in accordance with "Figure 2.28.2-1 Example of Executing nasshutdown".
If a message ID is displayed, refer to Maintenance Tool "2.28.3 Command termination messages and action to be taken" (MNTT 02-1770).
Take appropriate action and perform step (2) and later again.

```
$ sudo nasshutdown
```

Figure 2.28.2-1 Execution Example of the nasshutdown Command

NOTE: Use the "--force" option only when you are instructed to forcibly terminate the OS while the cluster is running.

(4) When you perform step (3), the confirmation message (KAQM25413-Q) shown in Figure 2.28.2-2 is displayed. Enter y to terminate the OS.
When you enter n, the processing is canceled.
If a message ID is displayed, refer to Maintenance Tool "2.28.3 Command termination messages and action to be taken" (MNTT 02-1770).
Take appropriate action and perform step (2) and later again.

```
$ sudo nasshutdown
KAQM25413-Q Do you want to stop the OS? (y/n) y
```

Figure 2.28.2-2 Confirmation Message (KAQM25413-Q) to be Displayed When nasshutdown Is Executed

NOTE: When you execute the command with the "-f" option, the OS is terminated without displaying the confirmation message. Do not add the "-f" option unless otherwise instructed to do so.

(5) Check whether the OS is completely terminated. To check, see if the power indicator on the execution node is turned off or if it is in the cluster configuration, execute the peerstatus command from the other side node to check whether the node status is [OFF].
For details about how to check node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).

NOTE: If it takes more than ten minutes to stop the OS, refer to "Installation '2.1.2.3 Terminating the OS forcibly by using the power button' (INST 02-0090)", and forcibly stop the OS.
However, perform the forcible stop of the OS only when it is instructed by the Technical Support Center.

(6) When you executed the command with the "--force" option in step (3), request the system administrator to check whether the resource groups failed over to the other side node or execute the clstatus command.
For details about the clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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2.28.3 Command termination messages and action to be taken

When you execute the nasshutdown command, messages might be displayed. Table 2.28.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.28.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14150-E	An error occurred in the system.	The processing for determining the execution environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM25301-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM25304-E	There is an error in the specification of an option or parameter (<*option or parameter*>).	A parameter or an option is incorrect.	Specify the correct option or parameter, and execute the command again.
4	KAQM25306-E	An attempt to execute the command has failed.	An attempt to execute the command failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM25399-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM25402-E	The OS cannot be stopped because an attempt to check the cluster status failed.	The OS cannot be terminated because the cluster status is unknown.	Check whether the execution node are stopped and execute the command again. For details about how to check whether the services are stopped, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). Only if you are instructed to ignore this error message and terminate the OS of the execution node, execute the command with the "--force" option.
7	KAQM25403-E	The OS cannot be stopped because the node is running.	The OS cannot be terminated because the node is running.	Request the system administrator to stop the execution node and execute the command again. For details about how to check whether the services are stopped, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). Only if you are instructed to ignore this error message and terminate the OS of the execution node, execute the command with the "--force" option.

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Table 2.28.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
8	KAQM25404-E	The node has not stopped. Also, the OS cannot be stopped because a failover cannot be performed.	The OS cannot be terminated because the node is running or the other side node is not running.	Request the system administrator to stop this side node, or start the services on the other node in the cluster and stop the services on the target node. Then execute the command again.
9	KAQM25413-Q	Do you want to stop the OS? (y/n)	Do you want to terminate the OS?	If you want to terminate the OS, enter “y”. If you want to cancel the processing, enter “n”.
10	KAQM37477-W	A read-write-content-sharing file system exists. Turn on the power for this node in the time frame before the storage period ends and before pruning of the data in the rwcs-system namespace starts. If you do not turn on the power in this time frame, all of the data on the file system will be restored from the HCP system and, as a result, access performance for end users might be degraded. (number of days in the storage period until pruning is performed = number_of_days_in_the_storage_period_until_pruning_is_performed)	A read-write-content-sharing file system exists. Turn on the power for this node in the time frame before the storage period ends and before pruning of the data in the rwcs-system namespace starts. If you do not turn on the power in this time frame, all of the data on the file system will be restored from the HCP system and, as a result, access performance for end users might be degraded.	* If this command is running in the maintenance operation procedure for the failure, no need to take action. Ask a system administrator to turn on the power for the node in the time frame before the storage period ends and before pruning of the data in the rwcs-system namespace starts. If the administrator does not turn on the power for the node in this timeframe, all of the data on the file system will be restored from the HCP system; as a result, access performance for end-users might be degraded.
11	KAQM37478-W	The number of days in the storage period until the data in the rwcs-system namespace is pruned could not be confirmed. If a read-write-content-sharing file system exists, check with the HCP administrator regarding the number of days in the storage period until pruning is performed, and make sure to turn on the power for this node in the time frame before the storage period ends and before pruning of the data in the rwcs-system namespace starts. If you do not turn on the power in this time frame, all of the data on the file system will be restored from the HCP system and, as a result, access performance for end users might be degraded.	The number of days in the storage period until the data in the rwcs-system namespace is pruned could not be confirmed.	* If this command is running in the maintenance operation procedure for the failure or in the status that the cluster is not constructed, no need to take action. Confirm with the system administrator whether the read-write-content-sharing file system exists. If the read-write-content-sharing file system exists, confirm with the HCP administrator for the storage period until the rwcs-system namespace is pruned and ask the HCP administrator to turn on the power of the node within the storage period. If the read-write-content-sharing file system does not exist, contact the HCP administrator to check that HCP is running normally and no problem occurs in the communication path with HCP, and then try again. To output again, perform “C.2.2 Determination Procedure when a Failure Occurred”.

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2.29 Rebooting the OS of This Side Node (nasreboot)

The command reboots the OS of this side node.

2.29.1 Command line

This command uses the following command lines.

- To reboot the OS:
  nasreboot [-f] [-q] [--force]

- To display the command format on the standard output:
  nasreboot -h

Table 2.29.1-1 describes the options.

Table 2.29.1-1 Description of the Options

No.	Option	Description	Remark
1	-f	Specify this option to inhibit the output of confirmation messages.	Do not add these options unless otherwise instructed to do so.
2	-q	Specify this option to inhibit the output to the standard output and standard error output.	
3	--force	Reboot the OS forcibly. However, it ends in an error when the clstatus command recognizes that “the status of this side node is UP” and “the status of the other side node is other than UP”.	For details about how to check node status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040). Specifying this option is ignored in the single node configuration. Do not add this option unless otherwise instructed to do so.
4	-h	Specify this option to output the command format to the standard output.	KAQM25301-I is displayed at the execution time.

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2.29.2 Execution procedure

This subsection describes the procedure for executing the nasreboot command.

NOTE:
- Confirm with the system administrator in advance whether the operation is performed in the Physical node. If it cannot be confirmed, refer to Maintenance Tool “3.4 Operation determination of the Physical node” (MNTT 03-0110) and determine the operational method.
- If a cluster is configured, request the system administrator to perform failover the resource group of the node to be restarted, and to set the “Node Status” of the node to be restarted to INACTIVE (stopping node).
  For the reference place in User’s Guide describing the details about failover/failback of a resource group, refer to “General ‘Reference Place in User's Guide for Operating Procedures Table 4 ‘Changing the execution node of a resource group’’ (GENE 00-0040)”, and for the reference place in User’s Guide describing the details about stopping a node, refer to “General ‘Reference Place in User's Guide for Operating Procedures Table 4 ‘Stopping and starting a node’’ (GENE 00-0040)”.
  When the system administrator is absent, the maintenance personnel should contact to system administrator and get the permission from him/her to execute this operation. For the execution procedure, refer to Maintenance Tool “3.2 Failback and Start of Node after Starting the OS” (MNTT 03-0030).

(1) Log in to the target node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

NOTE: In the cluster configuration, make sure that you log in to the correct node. To check which node you are logged into, execute the clstatus command. The first node that is displayed is the node you are currently logged into. For details about clstatus, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

(2) In the cluster configuration, execute the clstatus command and check the status of the node with the OS you want to reboot. Check whether the node status is INACTIVE.
For details about how to check node status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

NOTE: Step (2) is not necessary when no cluster is created or it is in the single node configuration.

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(3) Execute the nasreboot command in accordance with "Figure 2.29.2-1 Example of Executing nasreboot".
If a message ID is displayed, refer to Maintenance Tool "2.29.3 Command termination messages and action to be taken" (MNTT 02-1820).
Take appropriate action and perform step (2) and later again.

```
$ sudo nasreboot
```

Figure 2.29.2-1 Example of Executing the nasreboot

NOTE: Use the "--force" option only when you are instructed to forcibly reboot the OS while the cluster is running.

(4) When you perform step (3), the confirmation message (KAQM25414-Q) shown in Figure 2.29.2-2 is displayed. Enter y to reboot the OS.
When you enter n, the processing is canceled.
If a message ID is displayed, refer to Maintenance Tool "2.29.3 Command termination messages and action to be taken" (MNTT 02-1820).
Take appropriate action and perform step (2) and later again.

```
$ sudo nasreboot
KAQM25414-Q Do you want to restart the OS? (y/n) y
```

Figure 2.29.2-2 Confirmation Message (KAQM25414-Q) to be Displayed When nasreboot is Executed

NOTE: When you execute the command with the "-f" option, the OS is rebooted without displaying the confirmation message. Do not add the "-f" option unless otherwise instructed to do so.

(5) Check whether the OS is completely rebooted. To check in the cluster configuration, execute the peerstatus command of the other side node and check whether the node status is [BOOT COMPLETE].
For details about how to check node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).
In the single node configuration, make sure that the login prompt is returned from the remote console of BMC. For more details, refer to "Set Up '1.5 Startup Confirmation of OS by using Remote Console' (SETUP 01-0010)".

NOTE: Wait approximately 10 minutes before the OS is completely rebooted.

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(6) In the cluster configuration, when you executed the command with the "--force" option in step (3), request the system administrator to check whether the resource groups performed failover to the other side node or execute the clstatus.
For details about the clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(7) If a cluster is configured in the cluster configuration, request the system administrator to set the "Node Status" of the restarted node from "INACTIVE" to "UP"(starting node), and to perform failback the resource group, which has been performed failover, to the node that is restarted.
For the reference place in User's Guide describing the details about starting a node, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Stopping and starting a node'' (GENE 00-0040)", for the reference place in User's Guide describing the details about failover/failback of a resource group, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Changing the execution node of a resource group'' (GENE 00-0040)".
When the system administrator is absent, the maintenance personnel should contact to system administrator and get the permission from him/her to execute this operation. For the execution procedure, refer to Maintenance Tool "3.2 Failback and Start of Node after starting the OS" (MNTT 03-0030).

(8) When step (7) is completed, log in again to the execution node via ssh, and check the cluster status in the cluster configuration and resource group status in the single node configuration.
For details about how to check the cluster status, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040), for details about how to check the cluster status, and for details about how to check the resource group status, refer to Maintenance Tool "2.63 Resource Group Status Display (rgstatus)" (MNTT 02-3380)".

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2.29.3 Command termination messages and action to be taken

When you execute the nasreboot command, messages might be displayed. Table 2.29.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.29.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14150-E	An error occurred in the system.	The processing for determining the execution environment failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM25301-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM25304-E	There is an error in the specification of an option or parameter (<*option or parameter*>).	A parameter or an option is incorrect.	Specify the correct option or parameter, and execute the command again.
4	KAQM25306-E	An attempt to execute the command has failed.	An attempt to execute the command failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM25399-E	An internal error occurred.	An internal error occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.29.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
6	KAQM25406-E	The OS cannot be restarted because an attempt to check the cluster status failed.	The OS cannot be rebooted because the cluster status is unknown.	Check whether the execution node are stopped and execute the command again. For details about how to check whether the services are stopped, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). Only if you are instructed to ignore this error message and reboot the OS of the execution node, execute the command with the "--force" option.
7	KAQM25407-E	The OS cannot be restarted because the node is running.	The OS cannot be rebooted because the node is running.	Request the system administrator to stop the execution node and execute the command again. For details about how to check whether the services are stopped, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). Only if you are instructed to ignore this error message and reboot the OS of the execution node, execute the command with the "--force" option.
8	KAQM25408-E	The node has not stopped. Also, the OS cannot be restarted because a failover cannot be performed.	The OS cannot be rebooted because the node is running or the other side node is not running.	Request the system administrator to stop of this side node, or start of the other node in the cluster and stop of the execution node. Then execute the command again.
9	KAQM25414-Q	Do you want to restart the OS? (y/n)	Do you want to reboot the OS?	If you want to reboot the OS, enter "y". If you want to cancel the processing, enter "n".

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2.30 Resetting the OS of the Node (nncreset)

The command issues a reset request to the OS on the other side node, and to the OS of the local node in the single node configuration. Execute this command when you are requested to collect dumps or when the OS runs abnormally (for example, the OS slows down). The command is executable only after a cluster is created in the cluster configuration.

NOTE:
- Execute this command only when you are instructed to do so.
- HDI does not support Virtual Server.

2.30.1 Command line

This command uses the following command lines.

- To reset the OS of the node:
  nncreset [-y]

- To reset the Virtual Server running on the local node:
  nncreset [-y] [--vserver virtual-server-id]

- To display the command format on the standard output:
  nncreset -h

Table 2.30.1-1 describes the options.

Table 2.30.1-1 Description of the Options

No.	Option	Description	Remark
1	-y	Specify this option to inhibit the output of confirmation messages.	Do not add this option unless otherwise instructed to do so.
2	--vserver virtual-server-id	Specify the Virtual Server ID running on the local node. Do not specify this option in the single node configuration.	HDI does not support Virtual Server.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.30.2 Execution procedure

This subsection describes the procedure for executing the nncreset command. Refer to "(1) To execute reset for the Physical node" in case of executing reset for the Physical node.

(1) To execute reset for the Physical node

(a) Log in to the node via ssh from the maintenance PC. In the cluster configuration, log in to the node different from the node that resets.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

NOTE: In the cluster configuration, make sure that you log in to the correct node. To reset node 0, log in to node 1. To reset node 1, log in to node 0.
To check which node you are logged into, execute the clstatus command. The first node that is displayed is the node you are currently logged into. For details about clstatus, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(b) In the cluster configuration, execute the peerstatus command and check whether the node status is [BOOT COMPLETE].
For details about how to check node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).

NOTE: If you execute this command while the OS is being started, collection of dump files might fail or the power might be turned off. Confirm that the OS is completed started.

(c) Execute the nncreset command in accordance with "Figure 2.30.2-1 Example of Executing nncreset".
If a message ID is displayed, refer to Maintenance Tool "2.30.3 Command termination messages and action to be taken" (MNTT 02-1870).
Take appropriate action and execute the command again.

```
$ sudo nncreset
```

Figure 2.30.2-1 Execution Example of the nncreset Command

NOTE: When you execute the command with the "-y" option, the OS of the other side node is reset without displaying the confirmation message. Do not execute the command with the "-y" option unless otherwise instructed to do so.

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(d) When you perform step (c), the confirmation message (KAQM38009-Q) shown in Figure 2.30.2-2 is displayed in the cluster configuration and the confirmation message (KAQM38027-Q) shown in Figure 2.30.2-3 is displayed in the single node configuration. Enter y to reset the OS of the other side node.
When you enter n, the processing is canceled.
If a message ID is displayed, refer to Maintenance Tool "2.30.3 Command termination messages and action to be taken" (MNTT 02-1870).
Take appropriate action and perform step (b) and later again.

```
$ sudo nncreset
KAQM38009-Q Do you want to reset the other node in the cluster? (y/n) y
```

Figure 2.30.2-2 Confirmation Message (KAQM38009-Q) to be Displayed When nncreset Is Executed [In the cluster configuration]

```
$ sudo nncreset
KAQM38027-Q Do you want to reset this node? (y/n) y
```

Figure 2.30.2-3 Confirmation Message (KAQM38027-Q) to be Displayed When nncreset Is Executed [In the single node configuration]

(e) After the OS is reset, check whether the node is rebooted. To check in the cluster configuration, execute the peerstatus command and check whether the node status is [BOOT COMPLETE].
For details about how to check node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).
To check in the single node configuration, refer to "Set Up '1.5 Startup Confirmation of OS by Using Remote Console' (SETUP 01-0010)".

(f) Confirm whether the dump file is collected. Confirm a different SIM depending on the OS version. If the OS version is 2.1.1-XX, on the rebooted node, confirm that the SIM message of dump file collection "KAQK39500-E OS error Detail=05 00 00 00 Level=00 Type=03" is displayed.

If the OS version is later than 2.2.1-XX, on the rebooted node, check whether the SIM message for the completion of copying memory image (KAQK39500-E OS error Detail=05 00 00 01 Level=00 Type=03), and after a while, wait until the SIM of "KAQK39528-I Processing to convert dump files ended." that indicates the success of the dump file creation is displayed on the node. (It takes about 30 minutes to create dump files with the amount of 12GB memory installed.)

For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
For details about how to check SIM messages, refer to Maintenance Tool "2.6 Displaying SIMs on This Side (syseventlist)" (MNTT 02-0360).
If other SIM message is displayed, refer to "C.3 Messages".

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2.30.3 Command termination messages and action to be taken

When you execute the nncreset command, messages might be displayed. Table 2.30.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.30.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message “Management IP address is not set” is not output.
3	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
4	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
5	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
6	KAQM38007-E	An attempt to reset the other node in the cluster failed.	An attempt to reset the OS of the other side node failed.	Check whether a network failure occurred or a power failure occurred in the other side node. After you complete the check, execute the command again. If the same error occurs after you execute the command again, execute the “C.2.2 Determination Procedure when a Failure Occurred”.
7	KAQM38008-E	The reset processing timed out.	The reset processing did not end within the specified period.	A hardware failure might have occurred. Refer to “C.2.2 Determination Procedure when a Failure Occurred” and determine the problem.
8	KAQM38009-Q	Do you want to reset the other node in the cluster? (y/n)	Do you want to reset the OS of the other side node?	If you want to reset the OS, enter “y”. If you want to cancel the processing, enter “n”.
9	KAQM38027-Q	Do you want to reset this node? (y/n)	Do you want to reset this side node?	If you want to reset the OS, enter “y”. If you want to cancel the processing, enter “n”.

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Table 2.30.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
10	KAQM38040-E	The specified virtual server is running on the other node or the status is incorrect.	The specified virtual server is not operating in the local node or the Virtual Server is in an invalid status.	Reexecute step (b) and subsequent steps of Maintenance Tool "2.30.2 (2) To execute reset for the Virtual Server" (MNTT 02-1861) or restore the Virtual Server to the normal status.
11	KAQM38042-Q	Do you want to reset the virtual server <*Virtual Server name*>? (y/n)	Do you want to reset the Virtual Server?	Enter y if you want to reset the Virtual Server and enter n if you do not want to reset the Virtual Server.
12	KAQM38043-E	The specified virtual server does not exist.	The specified virtual server does not exist.	Confirm the target Virtual Server by the vnaslist command. For details about the vnaslist command, refer to Maintenance Tool "2.74 List of Virtual Servers (vnaslist)" (MNTT 02-3900).

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2.31 Displaying Licenses (licenselist)

The command lists the licenses given to this side node.

2.31.1 Command line

This command uses the following command lines.

- To list licenses:
  licenselist [-t term]

- To display the command format on the standard output:
  licenselist -h

Table 2.31.1-1 shows the description of each option.

Table 2.31.1-1 Description of the Options

No.	Option	Description	Remark
1	-t term	Specify this option to display the information about the licenses whose remaining valid period is shorter than the number of days specified for term (including the licenses that have expired). If the specified number of days is 0, the option displays only the information about the expired licenses.	You can specify a value in the range from 0 to 999 (days) for term. Do not add this option unless otherwise instructed to do so.
2	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.31.2 Output format

The output format for the licenselist command execution is shown in Figure 2.31.2-1 “Output Format for licenselist Command”.

```
Output format for licenselist

List of Licenses:
The number of licenses([count])
  License name      :  [License name]
  License ID        :  [License ID]
  License kind      :  [License kind]
  Available from    :  [Available from]
  Available to      :  [Available to]
  Capacity          :  [Capacity]

(The above lines are repeated for the number of licenses.)

*: Values acquired from the system are displayed within [  ].
```

Figure 2.31.2-1 Output Format for licenselist Command

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Table 2.31.2-1 describes the details about the items in “Figure 2.31.2-1 Output Format for licenselist Command”.

Table 2.31.2-1 Description of the Items in the Output Format

No.	Item	Description	Remark
1	[count]	Displays the sequential number of licenses that have been set.	—
2	[License name]	Displays the name of a license.	—
3	[License ID]	Displays the value that identifies a license.	—
4	[License kind]	Displays the type of a license.	Permanent : Permanent license Temporary : Temporary license Emergency : Emergency license Maintenance : Maintenance license Expired : Expired: Indicates that the Temporary, Emergency, or Maintenance license has expired.
5	[Available from]	Displays the date when a license is enabled.	The date is displayed in the following format: YYYY/MM/DD (year, month, and day)
6	[Available to]	Displays the date when a license expires (YYYY/MM/DD). If the license has no expiration date (when the type of the license is Permanent), -- is displayed.	The date is displayed in the following format: YYYY/MM/DD (year, month, and day)
7	[Capacity]	Displays the value of total capacity in a license key. If the license does not have total capacity (when total capacity is 0), -- is displayed.	—

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2.31.3 Execution procedure

This subsection describes the procedure for executing the licenselist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.31.3-1 shows an example of executing the licenselist command.
If a message ID is displayed, refer to Maintenance Tool "2.31.4 Command termination messages and action to be taken" (MNTT 02-1920).
Perform a propter action and execute the command again.

```
l$ sudo licenselist
List of Licenses:
The number of licenses (1)
  License name      :  Base software
  License ID        :  P6070
  License kind      :  Permanent
  Available from    :  2010/01/12
  Available to      :  --
  Capacity          :  --
```

Figure 2.31.3-1 Execution Example of the licenselist Command

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2.31.4 Command termination messages and action to be taken

When you execute the licenselist command, messages might be displayed. Table 2.31.4-1 lists the action to be taken for each message ID.

Table 2.31.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM01091-E	An attempt to acquire license information has failed.	An attempt to acquire license information failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	
3	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
4	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
5	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
7	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
8	KAQM14150-E	An error occurred in the system.	The processing for checking the environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM14156-E	An argument specified for the option "<*option-name*>" is invalid.	The specified argument is invalid.	Specify the correct parameter and execute the command again.

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2.32 Setting a License (licenseset)

The command enables the license specified by a file or a license key of this side node.
You need to execute the command and enable the license of both nodes.

2.32.1 Command line

This command uses the following command lines.

- To set a license by using a license key file:
  licenseset -F license-key-file [-i license-ID]

- To set a license by using a license key:
  licenseset -k license-key [-i license-ID]

- To display the command format on the standard output:
  licenseset -h

Table 2.32.1-1 shows the description of each option.

Table 2.32.1-1 Description of the Options

No.	Option	Description	Remark
1	-F license-key-file	Specify the name of a license key file.	The maximum length of a file name is 255 characters. As a file name, you can specify alphanumeric characters, hyphens (-), underscores (_), and periods (.). However, you cannot specify a period at the beginning or end of the file name.
2	-k license-key	Specify a license key.	Only alphanumeric characters can be specified as a license key. Do not use this option unless otherwise instructed to do so.
3	-i license-ID	Specify the value that identifies a license (the value that identifies a program product in the license key file).	If you omit this option, the system registers all the licenses for the program products contained in the license key file. Do not use this option unless otherwise instructed to do so.
4	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.32.2 Execution procedure

This subsection describes the procedure for executing the licenseset command.

NOTE: Before you execute this command, obtain the applicable license key file or license key from your system administrator.

(1) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.32.2-1 to upload a license key file to the home directory for maintenance personnel (/home/service).
For details about file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
The following figure shows an example of using pscp.
This step is not necessary when you specify a license key as a command option.

```
C:\>pscp -scp -unsafe C:\work\\ FBQLNBX.plk service@10.0.0.50:
```

Figure 2.32.2-1 Uploading a License Key File to the Home Directory for Maintenance Personnel

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Execute the licenseanalyze command to check whether the specified license key file or license key is correct.
For details about the licenseanalyze command, refer to Maintenance Tool "2.33 Analyzing a License Key (licenseanalyze)" (MNTT 02-1990).
If no information is displayed or the information about an irrelevant license is displayed, request the system administrator to provide the latest license key file or license key.

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(4) In accordance with “Figure 2.32.2-2 Example of Executing licenseset”, specify the name of the desired license key file as an option and execute the licenseset command.

```
$ sudo licenseset -F \ FBQLNBX.plk
```

Figure 2.32.2-2 Execution Example of the licenseset Command

If you are instructed to specify a license key, specify the license key as an option and execute the licenseset command in accordance with “Figure 2.32.2-3 Example of Executing licenseset”.

```
$ sudo licenseset –k 1NO41HDG5SLXYZ0BA3456789ABCDTUVWXYZ0JKLMU2WZ6Z9Y83A
```

Figure 2.32.2-3 Execution Example of the licenseset Command

If a message ID is displayed, refer to Maintenance Tool “2.32.3 Command termination messages and action to be taken” (MNTT 02-1960).
Perform a propter action and execute the command again.

NOTE: When you specify a license key, do not directly type it. Copy and paste the license key.

(5) After you complete the settings, execute the licenselist command to check the settings.
For details about the licenselist command, refer to Maintenance Tool “2.31 Displaying Licenses (licenselist)” (MNTT 02-1880).

(6) As shown in Figure 2.32.2-4, delete the license key file uploaded in step (1).
For details about how to delete a file, refer to Maintenance Tool “2.26 Deleting the Specified File (rmfile)” (MNTT 02-1660).

```
$sudo rmfile FBQLNBX.plk
```

Figure 2.32.2-4 Uploading the Transferred File

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2.32.3 Command termination messages and action to be taken

When you execute the licenseset command, messages might be displayed. Table 2.32.3-1 lists the action to be taken for each message ID.

Table 2.32.3-1 Message IDs and Action to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM01028-E	Internal processing failed.	Internal processing failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM01039-E	An attempt to specify a license has failed.	An attempt to enable a license failed. The processing for enabling licenses might have a problem.	
3	KAQM01041-E	An invalid license key was entered.	The license key is incorrect.	Check whether the entered license key is incorrect and execute the command again. If the error reoccurs, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM01045-E	The setting of the license failed.	An attempt to enable a license failed. The Temporary license can be used only once.	
5	KAQM01046-E	The setting of the license failed.	An attempt to enable a license failed. You cannot use the Temporary license or Emergency license after you use the Permanent license.	
6	KAQM01047-E	The setting of the license failed.	An attempt to enable a license failed. You cannot use the Temporary license after you use the Emergency license.	
7	KAQM01067-E	Internal processing failed.	Internal processing failed. The system might be busy.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM01078-E	The setting of the license failed.	An attempt to enable a license failed. The format of the license key is correct. However, the license key contains invalid data.	

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Table 2.32.3-1 Message IDs and Action to be Taken (2/3)

No.	Message ID	Message	Description	Action
9	KAQM01101-W	It failed in the acquisition of information after it had set it though the license was set.	Acquiring the information about a license failed after the license is enabled.	Execute the licenselist command to check the information about the license. For details about the licenselist command, refer to Maintenance Tool "2.31 Displaying Licenses (licenselist)" (MNTT 02-1880). After you check the license information, execute the command again. If the error reoccurs, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
11	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.32.3-1 Message IDs and Action to be Taken (3/3)

No.	Message ID	Message	Description	Action
12	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
13	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
15	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
16	KAQM14150-E	An error occurred in the system.	The processing for checking the environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
17	KAQM14156-E	An argument specified for the option "<*option-name*>" is invalid.	The specified argument is invalid.	Specify the correct parameter and execute the command again.

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2.33 Analyzing a License Key (licenseanalyze)

The command displays the result of analyzing the specified license key file or license key.

NOTE: Before you execute this command, obtain the applicable license key file or license key from your system administrator.

2.33.1 Command line

This command uses the following command lines.

- To analyze a license key file:
  licenseanalyze -F license-key-file
- To analyze a license key:
  licenseanalyze -k license-key
- To display the command format on the standard output:
  licenseanalyze -h

Table 2.33.1-1 shows the description of each option.

Table 2.33.1-1 Description of the Options

No.	Option	Description	Remark
1	-F license-key-file	Specify the name of a license key file.	The maximum length of a file name is 255 characters. As a file name, you can specify alphanumeric characters, hyphens (-), underscores (_), and periods (.). However, you cannot specify a period at the beginning or end of the file name.
2	-k license-key	Specify a license key.	Only alphanumeric characters can be specified as a license key.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.33.2 Output format

The output format for the licenseanalyze command execution is shown in Figure 2.33.2-1 “Output Format for licenseanalyze Command”.

```
Output format for licenseanalyze

List of Licenses:
The number of licenses([count])
  License name     :   [License name]
  License ID       :   [License ID]
  License key      :   [License key]
  License kind     :   [License kind]
  Term             :   [Term]
  Capacity         :   [Capacity]

(The above lines are repeated for the number of licenses.)

*: Values acquired from the system are displayed within [  ].
```

Figure 2.33.2-1 Output Format for licenseanalyze Command

Table 2.33.2-1 describes the details about the items in “Figure 2.33.2-1 Output Format for licenseanalyze Command”.

Table 2.33.2-1 Description of the Items in the Output Format

No.	Item	Description	Remark
1	[count]	Displays the sequential number of licenses that have been set.	—
2	[License name]	Displays the name of a license.	—
3	[License ID]	Displays the value that identifies a license.	—
4	[License key]	Displays a license key.	—
5	[License kind]	Displays the type of a license.	Permanent : Permanent license Temporary : Temporary license Emergency : Emergency license Maintenance : Maintenance license Expired : Indicates that the Temporary, Emergency, or Maintenance license has expired.
6	[Term]	Displays the valid period for a license (in days). If the type of the license is “Permanent”, -- is displayed.	—
7	[Capacity]	Displays the license capacity.	• In the case of the capacity charging license, the window displays the number of values in the license key. • In the other cases of the capacity charging license, the window displays as “--.”

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2.33.3 Execution procedure

This subsection describes the procedure for executing the licenseanalyze command.

(1) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.33.3-1 to upload a license key file to the home directory for maintenance personnel (/home/service).
For details about file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
The following figure shows an example of using pscp.
This step is not necessary when you specify a license key as a command option.

```
C:\>pscp -scp -unsafe C:\work\\ FBQLNBX.plk service@10.0.0.50:
```

Figure 2.33.3-1 Uploading a License Key File to the Home Directory for Maintenance Personnel

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Figure 2.33.3-2 shows an example of executing the licenseanalyze command with a license key file as an option.
Figure 2.33.3-3 shows an example of executing the licenseanalyze command with a license key as an option.
If a message ID is displayed, refer to Maintenance Tool "2.33.4 Command termination messages and action to be taken" (MNTT 02-2030).
Perform a propter action and execute the command again.

```
$ sudo licenseanalyze -F FBQLNBX.plk
List of License Key Information:
The number of license key information (1)
  License name  : Base software
  License ID    : P6070
  License key   : 1NO41HDG5SLXYZ0BA3456789ABCDTUVWXYZ0JKLMU2WZ6Z9Y83A
  License kind  : Permanent
  Term          : --
  Capacity      : --
```

Figure 2.33.3-2 Execution Example of the licenseanalyze Command (When Using a License Key File)

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```
$ sudo licenseanalyze –k
1NO41HDG5SLXYZ0BA3456789ABCDTUVWXYZ0JKLMU2WZ6Z9Y83A
List of License Key Information:
The number of license key information (1)
  License name  : Base software
  License ID    : P6070
  License key   : 1NO41HDG5SLXYZ0BA3456789ABCDTUVWXYZ0JKLMU2WZ6Z9Y83A
  License kind  : Permanent
  Term          : --
  Capacity      : --
```

Figure 2.33.3-3 Execution Example of the licenseanalyze Command (When Using a License Key)

NOTE: When you specify a license key, do not directly type it. Copy and paste the license key.

(4) As shown in Figure 2.33.3-4, delete the license key file uploaded in step (1).
For details about how to delete a file, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$sudo rmfile FBQLNBX.plk
```

Figure 2.33.3-4 Deleting the Uploaded File

NOTE: If you continue to enable more licenses, you do not need to delete the license key file.

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2.33.4 Command termination messages and action to be taken

When you execute the licenseanalyze command, messages might be displayed. Table 2.33.4-1 lists the action to be taken for each message ID.

Table 2.33.4-1 Message IDs and Action to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM01028-E	Internal processing failed.	Internal processing failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM01041-E	An invalid license key was entered.	An incorrect license key is entered.	Check whether the entered license key is incorrect and execute the command again. If the error reoccurs, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM01067-E	Internal processing failed.	Internal processing failed. The system might be busy.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM01089-E	An invalid license key file was entered.	An incorrect license key file is entered. The entered file does not have the format of a license key file.	Check whether the entered file is a license key file and execute the command again. If the error reoccurs, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.33.4-1 Message IDs and Action to be Taken (2/3)

No.	Message ID	Message	Description	Action
5	KAQM01090-E	An invalid license key file was entered.	An incorrect license key file is entered. The information in the license key file is incorrect.	Check whether the entered license key file is incorrect and execute the command again. If the error reoccurs, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM01100-E	The specified license key file doesn't exist.	The specified license key file does not exist.	Store the license key file and execute the command again.
7	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.33.4-1 Message IDs and Action to be Taken (3/3)

No.	Message ID	Message	Description	Action
9	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
10	KAQM14134-E	An error occurred in the shared processing of commands. (Error = *<error>*)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
11	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—
12	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
13	KAQM14150-E	An error occurred in the system.	The processing for checking the environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM14156-E	An argument specified for the option "*<option-name>*" is invalid.	The specified argument is invalid.	Specify the correct parameter and execute the command again.
15	KAQM14160-E	The specified file name includes an invalid character or exceeds the maximum length. (file name = specified-file-name)	The specified file name contains an invalid character or the length of the file name exceeds the specified upper limit.	Check the specified file name, make changes if necessary, and execute the command again.

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2.34 Displaying the Version of the OS (versionlist)

The command displays the installed product version.

2.34.1 Command line

This command uses the following command lines.

- To display the version of the installed product:
  versionlist
- To display detailed information:
  versionlist -v
- To display the version of the OS:
  versionlist --os
- To display the command format on the standard output:
  versionlist -h

Table 2.34.1-1 shows the description of each option.

Table 2.34.1-1 Description of the Option

No.	Option	Description	Remark
1	-v	Used to display detailed information	This option cannot be specified at the same time with the item 2.
2	--os	Specify in case of displaying the OS name and the OS version. This option can be specified if the OS version is 3.1.0-XX or later.	This option cannot be specified at the same time with the item 1. Do not execute the command with this option unless specifically instructed.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.34.2 Output format

The output format for the versionlist command execution is shown in Figure 2.34.2-1 “Output Format for versionlist Command”.

```
Output format for versionlist

Products Version:
  [OS-name]                        :  [OS-version]

Output format for versionlist -v

Products Version:
  [OS-name] [Zone information]  :  [OS-version]

versionlist --os output format

System Version
  [OS-name]                        :  [OS-version]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.34.2-1 Output Format for versionlist Command

Table 2.34.2-1 describes the details about the items in “Figure 2.34.2-1 Output Format for versionlist Command”.

Table 2.34.2-1 Description of the Items in the Output Format

No.	Item	Description	Remark
1	[OS-name]	Outputs the name of the OS.	Different contents are output depending on the configuration. The output contents is “Hitachi Data Ingestor”
2	[Zone information]	Outputs (I).	—
3	[OS-version]	Outputs the version of the OS.	—
4	[OS-name]	Outputs the name of the OS.	The output contents are as follows. File Operating System
5	[OS-version]	Outputs the version of the OS.	—

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2.34.3 Execution procedure

This subsection describes the procedure for executing the versionlist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.34.3-1 shows an example of executing the versionlist command. The format of displaying the versions differs by the version of OS. If the OS version is 3.1.1-XX or earlier, the display is as shown in Figure 2.34.3-1, and if the OS version is 3.2.0-XX or later, the display is as shown in Figure 2.34.3-2.
If a message ID is displayed, refer to Maintenance Tool "2.34.4 Command termination messages and action to be taken" (MNTT 02-2080).
Perform a propter action and execute the command again.

```
$ sudo versionlist
Products Version:
  Hitachi Data Ingestor          : 03-01-00-00-00

$sudo versionlist -v
Products Version:
  Hitachi Data Ingestor(I)       : 03-01-00-00-00

$ sudo versionlist --os
System Version:
  File Operating System          : 03-01-00-00-00
```

Figure 2.34.3-1 Execution Example of the versionlist Command (OS version: 3.1.1-XX or earlier)

```
$ sudo versionlist
Products Version:
  Hitachi Data Ingestor          : 3.2.0-00

$ sudo versionlist -v
Products Version:
  Hitachi Data Ingestor(I)       : 3.2.0-00

$ sudo versionlist --os
System Version
  File Operating System           : 3.2.0-00
```

Figure 2.34.3-2 Execution Example of the versionlist Command (OS version: 3.2.0-XX or later)

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2.34.4 Command termination messages and action to be taken

When you execute the versionlist command, messages might be displayed. Table 2.34.4-1 lists the action to be taken for each message ID.

Table 2.34.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM01028-E	Internal processing failed.	Internal processing failed. The processing of the program management file, OS disk, or system file might have a problem.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
5	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
6	KAQM14150-E	An error occurred in the system.	The processing for checking the environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.35 Displaying the LU Information in the Disk Array Subsystem (alulist)

The command displays the information about the LUs in the disk array subsystem that are recognized by a node. The purpose of this command is to check if the LUs in the disk array subsystem can be recognized before configuring a cluster.

NOTE: This is not supported in the single node configuration.

2.35.1 Command line

This command uses the following command lines.

- To display the information about the LUs in the disk array subsystem that is recognized by a node:
  alulist
- To display the information with colons as delimiters:
  alulist -c
- To display the command format on the standard output:
  alulist –h

Table 2.35.1-1 shows the description of each option.

Table 2.35.1-1 Description of the Options

No.	Option	Description	Remark
1	-c	Specify this option to display the information about the LUs in the disk array subsystem that are recognized by a node using colons (:) as delimiters.	—
2	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.35.2 Output format

The output format for the alulist command execution is shown in Figure 2.35.2-1 “Output Format for alulist Command”.

```
Output format for alulist

model            serial          LDEV(  hex)                port          type            size
[model-name]   [serial-No.]   [internal-LU-No. (hex)]   [port-No.]   [drive-type]   [LU capacity]

(The above line is repeated for the number of LUs.)

*: Values acquired from the system are displayed within [  ].
```

Figure 2.35.2-1 Output Format for alulist Command

Table 2.35.2-1 describes the details about the items in “Figure 2.35.2-1 Output Format for alulist Command”.

Table 2.35.2-1 Description of the Items in the Output Format

No.	Item	Description	Remark
1	[model-name]	Displays the model name of the disk array subsystem containing the LU.	The model name is as follows: • AMS : DF800S, DF800M, DF800H, DF800ES, DF800EM, or DF800EH • AMS or specified model name: DF800EXS • HUS : DF850XS, DF850S, or DF850MH • USP_V : RAID600 FC • USP_VM : RAID600 RK • VSP : RAID700 • VSP_G1000 : RAID800 • HUS_VM : HM700 • VSP_Gx00 : HM800 (any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850 (any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900)
2	[serial-No.]	Displays the serial number of the disk array subsystem containing the LU.	—
3	[internal-LU-No.]	Displays the internal LU number in decimal format. The digits between parentheses are hexadecimal.	—
4	[port-No.]	Displays the port number of the disk array subsystem where LU is mapped.	If the LU is mapped to the multiple port, one of those port numbers is displayed.
5	[drive-type]	Displays the type of disk drives making up the LU.	The displayed drive type is “FC/SAS”, “SATA”, or “SSD”,“SAS7K”. “-” is displayed in case of an external disk array or USP V, USP VM, VSP, VSP G1000, VSP Gx00/VSP Fx00, HUS VM, and an LU of HDP (including HDT)
6	[LU-capacity]	Displays the size of the LU in GB.	The display becomes “-” when a device failure is occurred.

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2.35.3 Execution procedure

This subsection describes the procedure for executing the alulist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.35.3-1 shows an example of executing the alulist command without options. Figure 2.35.3-2 shows an example of executing the alulist command with the -c option.
Check whether the LDEVs in the example ("internal LU No." Table 2.35.2-1 #3 or "LDEV" in Figure 2.35.3-1) match the LUs mapped to the disk array subsystem.
If a message ID is displayed, refer to Maintenance Tool "2.35.4 Command termination messages and action to be taken" (MNTT 02-2120).
Perform a propter action and execute the command again.

```
$ sudo alulist
model      serial      LDEV(   hex)  port   type      size
AMS      85010110          0(  0000) 1A    SATA     70.000GB
AMS      85010110          3(  0003) 1A    SATA      3.000GB
```

Figure 2.35.3-1 Execution Example of the alulist Command (Without Options)

```
$ sudo alulist -c
AMS:85010110:0:0000:1A:SATA:70.000GB
AMS:85010110:3:0003:1A:SATA:3.000GB
```

Figure 2.35.3-2 Example Output After the alulist Command (with -c Option)

NOTE:
- The command displays the information about the LUs that are recognized by a node immediately after the OS starts. The command does not display the information about the LUs that are added or deleted after the OS is started.
- When alternate paths are configured, the command displays only the information about the LUs that are mapped to one of the paths.

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2.35.4 Command termination messages and action to be taken

When you execute the alulist command, messages might be displayed. Table 2.35.4-1 lists the action to be taken for each message ID.

Table 2.35.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
5	KAQM33008-E	A system error has occurred.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.36 Displaying the Status of Other Side Node (peerstatus)

The command displays the status of the other side node. The possible the other side node states are: boot start, boot completion, shutdown start, CPU power being supplied, CPU power cut-off, and dump start.

NOTE: This is not supported in the single node configuration.

2.36.1 Command line

This command uses the following command lines.

- To display the status of the other side node:
  peerstatus

- To display the command format on the standard output:
  peerstatus -h

Table 2.36.1-1 describes the option.

Table 2.36.1-1 Description of the Option

No.	Option	Description	Remark
1	-h	Output the command format to the standard output.	KAQG46951-I is displayed at the execution time.

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2.36.2 Output format

The output format for the peerstatus command execution is shown in Figure 2.36.2-1 “Output Format for peerstatus Command”.

```
Output format for peerstatus

[the-other-side-node-information]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.36.2-1 Output Format for peerstatus Command

Table 2.36.2-1 describes the details about the item in “Figure 2.36.2-1 Output Format for peerstatus Command”.

Table 2.36.2-1 Description of the Item in the Output Format

No.	Item	Description
1	[the other side-node-status]	Displays the status of the other side node. For details about node status, refer to Table 2.36.2-2.

Table 2.36.2-2 Details About the Possible Status of the Other Side Node

No.	Output result	Description	Remark
1	BOOT START	Boot has started.	This indication is displayed when the OS is being booted.
2	BOOT COMPLETE	Boot is completed.	This indication is displayed when the OS is running.
3	SHUTDOWN	Shutdown has started.	This indication is displayed when the OS is being shut down.
4	STOP	Planned termination is performed for the OS, dump collection has terminated, or the kernel is blocked.	This indication is displayed when the startup processing or termination processing for the OS is started.
5	DUMP	Dump collection has started.	This indication is displayed when dumps are being collected.
6	ON	Power is being supplied to the CPU.	This indication is displayed when the startup processing or termination processing for the OS is started.
7	OFF	Power to the CPU has been cut off.	This indication is displayed when the OS is terminated.
8	UNKNOWN	The node status cannot be acquired.	The node status cannot be acquired because an internal error occurred, the LAN is disconnected, the cluster is undefined, or power to the BMC in the other side node is cut off.

Figure 2.36.2-2 shows the transition of the node status.

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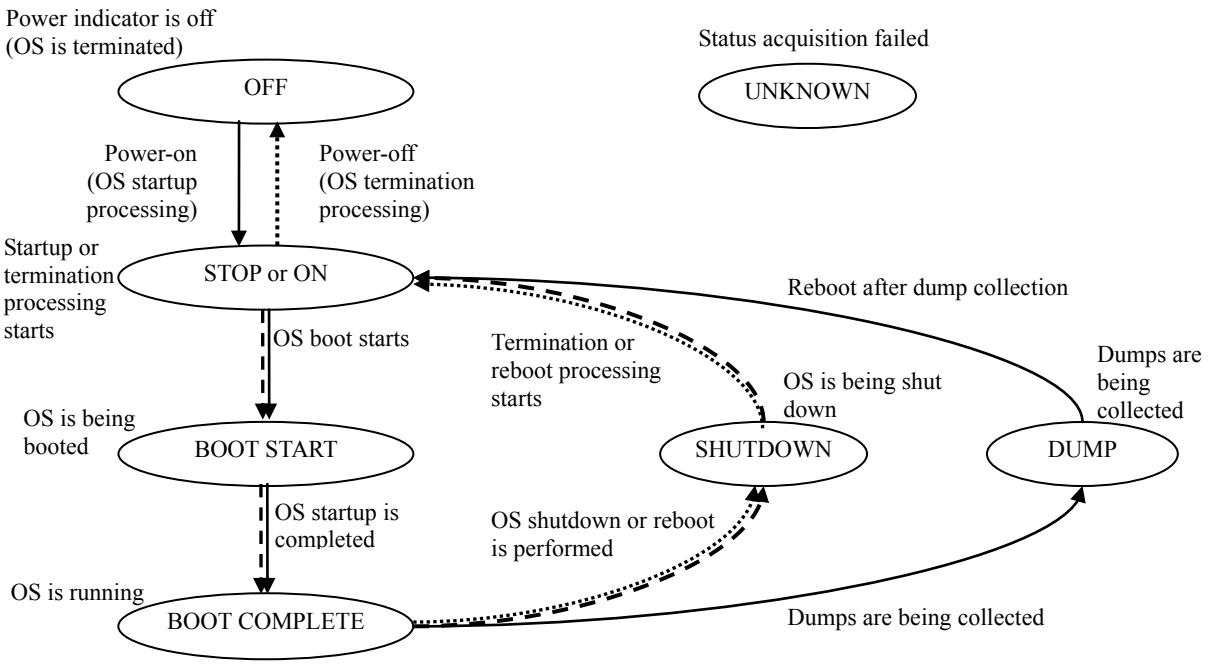

Figure 2.36.2-2 Transition of Node Status

NOTE: After the OS startup, the status of the node is shifted in order of OFF, STOP, BOOT START, BOOT COMPLETE. However, at the OS startup after the occurrence of hardware failure, the node status other than OFF for the cases hardware failure occurs might be displayed.

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2.36.3 Execution procedure

This subsection describes the procedure for executing the peerstatus command.

(1) Log in to the node different from the node to be checked the status via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.36.3-1 shows an example of executing the peerstatus command.
If a message ID is displayed, refer to Maintenance Tool "2.36.4 Command termination messages and action to be taken".
Perform a propter action and execute the command again.

```
$sudo peerstatus
BOOT COMPLETE
```

Figure 2.36.3-1 Execution Example of the peerstatus Command

2.36.4 Command termination messages and action to be taken

When you execute the peerstatus command, messages might be displayed. Table 2.36.4-1 lists the action to be taken for each message ID.

Table 2.36.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQG46951-I	Usage:<*command-syntax*>	Output of the command format.	—
2	KAQG46952-E	An option is incorrect.	The option is incorrect.	Check the format of the command line and execute the command again.

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2.37 Displaying the Information of Tape Devices (tapelist)

The command lists the tape devices that are connected to the FC ports in a node and the registered tape devices.

NOTE: This is not supported in the single node configuration.

2.37.1 Command line

This command uses the following command lines.

- To display the physically connected tape device:
  tapelist -d
- To display the tape devices that are physically connected or registered:
  tapelist -d -A
- To output the command format on the standard output:
  tapelist -h

NOTE: The tapelist command has options other than the above. However, if you use those options, you cannot check the information described here. Therefore, use only the options listed above.

Table 2.37.1-1 describes the options.

Table 2.37.1-1 Description of the Options

No.	Option	Description	Remark
1	-d	Display the physically connected tape device.	—
2	–d –A	Display the tape devices that are physically connected or registered.	—
3	-h	Output the command format to the standard output.	KAQB11708-I is displayed at the execution time.

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2.37.2 Output format

The output format for the tapelist command execution is shown in Figure 2.37.2-1 “Output Format for tapelist Command”.

```
Output format for tapelist

WWN              LUN     Status    Model     Type              Path
-----------------------------------------------------------------------------------------
[WWN]            [LUN]   [Status]  [Model]   [device-type]     [path-name]

(The above line is repeated for the number of tape devices.)

*: Values acquired from the system are displayed within [  ].
```

Figure 2.37.2-1 Output Format for tapelist Command

Table 2.37.2-1 describes the details about the items in “Figure 2.37.2-1 Output Format for tapelist Command”.

Table 2.37.2-1 Description of the Items in the Output Format

No.	Item	Description	Remark
1	[WWN]	Displays the 16-digit WWN of a tape device in hexadecimal format.	—
2	[LUN]	Displays a LUN of a tape device.	—
3	[status]	Indicates the status of a tape device.	The displayed status is as follows: D, D: The status where the tape device is physically connected but not registered D, A: The status where the tape device is physically connected and registered
4	[model]	Displays the product information of a connected or registered tape drive or tape changer.	If the correct information cannot be acquired due to a device failure or for other reasons, Error is displayed.
5	[device-type]	Displays the device type of a connected or registered tape device.	The displayed device type is either of the following: • Sequential-Access (tape drive) • Medium Changer (tape changer) If the correct information cannot be acquired due to a device failure or for other reasons, Error is displayed.
6	[path-name]	Displays the full path for the device file of a connected or registered tape drive or tape changer.	—

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2.37.3 Execution procedure

This subsection describes the procedure for executing the tapelist command.

(1) Check whether the tape device is completely installed.
For details about how to install a tape device, refer to "Installation 'Chapter 3 Setting the Tape Library' (INST 03-0000)".

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Figure 2.37.3-1 shows an example of executing the tapelist command.
If a message ID is displayed, refer to Maintenance Tool "2.37.4 Command termination messages and action to be taken" (MNTT 02-2200).
Perform a propter action and execute the command again.

```
$ sudo tapelist -d
Mar 16 15:45:50 KAQB11500-I tapelist command execution has started.
Mar 16 15:45:50 KAQB12225-I The list of tape device information will now be displayed.
WWN                  LUN    Status    Model     Type          Path
-----------------------------------------------------------------------------------------------------------------
100000e0022216cc   0 D,D    Ultrium   3-SCSI   Sequential-Access /dev/100000e0022216cc/nst00
100000e0022216cd   0 D,D    Ultrium   3-SCSI   Sequential-Access /dev/100000e0022216cd/nst00
Mar 16 15:45:50 KAQB11501-I tapelist command has finished.
```

Figure 2.37.3-1 Execution Example of the tapelist Command

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2.37.4 Command termination messages and action to be taken

When you execute the tapelist command, messages might be displayed. Table 2.37.4-1 lists the action to be taken for each message ID.

Table 2.37.4-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQB11500-I	<*command*> command execution has started.	The command began to be executed.	—
2	KAQB11501-I	<*command*> command has finished.	The command execution is terminated.	—
3	KAQB11503-E	An option is incorrect.	An option is incorrect.	Check the command line format, and then execute the command again.
4	KAQB11505-E	The <*parameter*> parameter is too short or too long.	The length of the specified parameter is incorrect.	Check the command format, specify the correct parameter, and execute the command again.
5	KAQB11506-E	The value of the <*parameter*> parameter is incorrect.	The format of the specified parameter (character string, value) is incorrect.	
6	KAQB11510-E	An attempt to allocate memory failed.	Processing is terminated because memory could not be allocated during the execution of the command.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQB11512-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQB11513-E	There are too many or too few values in the <*parameter*> parameter.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
9	KAQB11642-E	The current directory is invalid.	The current directory is invalid.	Perform step (2) and later again.

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Table 2.37.4-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
10	KAQB11708-I	Usage: *<command-syntax>*	Output of the command format.	—
11	KAQB12226-I	There is no tape device information.	The information about tape devices does not exist.	—
12	KAQB12233-E	Registration information for the tape device could not be acquired.	The registered information about tape devices could not be acquired.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300)".
13	KAQB12249-E	Acquisition of the tape device's connection status failed because the tape device is being used. (WWN=<*WWN*>, LUN=<*LUN*>)	The connection status of the tape device in use was attempted to be displayed.	Re-execute after confirming that the tape device is not used.

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2.38 Configuring the FC Path I/O-Related Parameters (fpioctl)

The command configures the parameters related to FC path of HBAs and SCSI drivers that affect the operation of disk array and displays the settings.
Execute this command under the instruction of the manufacturer of the Data Ingestor if a performance problem occurs.

NOTE:
- Execute this command only when you are instructed to do so by the manufacturer of the Data Ingestor. Do not execute the command in other cases.
- This command is not supported in the single node configuration not connected to the disk array subsystem.

2.38.1 Command line

This command uses the following command lines. Select the appropriate command line depending on your maintenance issue.

- To display the current settings:
  fpioctl

- (Only when Emulex HBA is installed) to set the maximum number of commands that is issued from an HBA:
  fpioctl --lpfc_hba_queue_depth <*value*>

- (Only when Emulex HBA is installed) to set the maximum number of commands that is received by the command device:
  fpioctl --lpfc_lun_queue_depth <*value*>

- (Only when Emulex HBA is installed) to set the length of time to retain an I/O error when the command device is lost:
  fpioctl --lpfc_devloss_tmo <*value*>

- (Only when Emulex HBA is installed) to set the maximum number of ports that is assigned to a LUN:
  fpioctl --lpfc_max_luns <*value*>

- To set the minimum timeout time for a SCSI driver:
  fpioctl --scsi_specific_min_tmo <*value*>

- (Only when Hitachi HBA is installed) to set the maximum number of commands that is issued from an HBA:
  fpioctl --hfc_can_queue <value>

- (Only when Hitachi HBA is installed) to set the maximum number of commands that is received by the command device:
  fpioctl --hfc_queue_depth <value>

- (Only when Hitachi HBA is installed) to set the length of time to retain an I/O error when the command device is lost:
  fpioctl --hfc_link_down <value>

- (Only when Hitachi HBA is installed) to set the maximum number of ports that is assigned to a LUN:
  fpioctl --hfc_max_lun <value>

- To display the command format on the standard output:
  fpioctl -h

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Table 2.38.1-1 describes the options.

Table 2.38.1-1 Description of the Options

No.	Option	Description	Remark
1	--lpfc_hba_queue_depth <*value*>	(Only when Emulex HBA is installed) set the maximum number of commands that are issued from an HBA.	For the values to be set, follow the instructions of the manufacturer of the Data Ingestor.
2	--lpfc_lun_queue_depth <*value*>	(Only when Emulex HBA is installed) set the maximum number of commands that are received by the command device.	
3	--lpfc_devloss_tmo <*value*>	(Only when Emulex HBA is installed) set the length of time to retain an I/O error when the command device is lost. The unit is [second].	
4	--lpfc_max_luns <*value*>	(Only when Emulex HBA is installed) set the maximum number of ports that are assigned to a LUN.	
5	--scsi_specific_min_tmo <*value*>	Set the minimum timeout time for a SCSI driver. The unit is [second].	
6	--hfc_can_queue <*value*>	(Only when Hitachi HBA is installed) set the maximum number of commands that are issued from an HBA.	
7	--hfc_queue_depth <*value*>	(Only when Hitachi HBA is installed) set the maximum number of commands that are received by the command device.	
8	--hfc_link_down <*value*>	(Only when Hitachi HBA is installed) set the length of time to retain an I/O error when the command device is lost. The unit is [second].	
9	--hfc_max_lun <*value*>	(Only when Hitachi HBA is installed) set the maximum number of ports that are assigned to a LUN.	
10	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.38.2 Execution procedure

This subsection describes the procedure for executing the fpioctl command.
If you want to configure parameters, refer to 2.38.2 (1) Configuring I/O-related parameters.
If you want to list the settings, refer to Maintenance Tool "2.38.2 (2) Displaying I/O-related parameter settings" (MNTT 02-2250).

(1) Configuring I/O-related parameters

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Figure 2.38.2-1 and Figure 2.38.2-2 shows an example of executing the fpioctl command (for specifying the maximum number of commands that are issued from an HBA).
If a message ID is displayed, refer to Maintenance Tool "2.38.3 Command termination messages and action to be taken" (MNTT 02-2270).

```
$ sudo fpioctl --lpfc_hba_queue_depth 512:
```

Figure 2.38.2-1 Execution Example of the fpioctl Command (in the case of Emulex HBA)

```
$ sudo fpioctl -- hfc_queue_depth 512
```

Figure 2.38.2-2 Execution Example of the fpioctl Command (in the case of Hitachi HBA)

NOTE: For the options and values to be specified, follow the instructions of the developer of the Data Ingestor.

(c) After you complete the settings, use the fpioctl command to check whether the information is correctly specified.
For details about how to use the fpioctl command to check the settings, refer to Maintenance Tool "2.38.2 (2) Displaying I/O-related parameter settings" (MNTT 02-2250).

(d) To enable the settings, reboot the OS.
For details about how to reboot the OS, refer to Maintenance Tool "2.29 Rebooting the OS of This Side Node (nasreboot)" (MNTT 02-1790).

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(2) Displaying I/O-related parameter settings

The output format for the fpioctl command execution is shown in Figure 2.38.2-3, Figure 2.38.2-4, and Figure 2.38.2-5.

```
Output format for fpioctl

lpfc_hba_queue_depth        :  [HBA_value]
lpfc_lun_queue_depth        :  [LUN_value]
lpfc_devloss_tmo            :  [devloss_value]
lpfc_max_luns               :  [max_lun_value]
scsi_specific_min_tmo       :  [min_tmo_value]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.38.2-3 Output Format for fpioctl Command (in the case of Emulex HBA)

```
Output format for fpioctl

hfc_can_queue               : [HBA_value]
hfc_queue_depth             : [LUN_value]
hfc_link_down               : [devloss_value]
hfc_max_lun                 : [max_lun_value]
scsi_specific_min_tmo       : [min_tmo_value]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.38.2-4 Output Format for fpioctl Command (in the case of Hitachi HBA)

```
Output format for fpioctl

scsi_specific_min_tmo       : [min_tmo_value]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.38.2-5 Output Format for fpioctl Command (in the case of no HBA)

Table 2.38.2-1 describes the details about the items in Figure 2.38.2-3, Figure 2.38.2-4, and Figure 2.38.2-5.

Table 2.38.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[HBA_value]	Displaysthe maximum number of commands that are issued from an HBA.
2	[LUN_value]	Displays the maximum number of commands that are received by the command device.
3	[devloss_value]	Displays the length of time to retain an I/O error when the command device is lost. The unit is [second].
4	[max_lun_value]	Displays the maximum number of ports that are assigned to a LUN.
5	[min_tmo_value]	Displays the minimum I/O timeout time for a SCSI driver. The unit is [second].

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Execute the fpioctl command according to the following procedure.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the fpioctl command in accordance with Figure 2.38.2-6 and Figure 2.38.2-7.
If a message ID is displayed, refer to Maintenance Tool "2.38.3 Command termination messages and action to be taken" (MNTT 02-2270) and take appropriate action.
After you complete the action, execute the command again.

```
$ sudo fpioctl
lpfc_hba_queue_depth    :  512
lpfc_lun_queue_depth    :  32
lpfc_devloss_tmo        :  30
lpfc_max_luns           :  255
scsi_specific_min_tmo   :  30
```

Figure 2.38.2-6 Execution Example of the fpioctl Command (in the case of Emulex HBA)

```
$ sudo fpioctl
hfc_can_queue              : 512
hfc_queue_depth            : 32
hfc_link_down              : 30
hfc_max_lun                : 255
scsi_specific_min_tmo      : 30
```

Figure 2.38.2-7 Execution Example of the fpioctl Command (in the case of Hitachi HBA)

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2.38.3 Command termination messages and action to be taken

When you execute the fpioctl command, messages might be displayed. Table 2.38.3-1 lists the action to be taken for each message ID.

Table 2.38.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
2	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—

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Table 2.38.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
5	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
6	KAQM14159-E	The argument specified for the option <*option-name*> is not a numeric value or is outside the valid range.	The specified argument is not a value, or the beginning value is 0 or outside the range.	Enter an appropriate value based on the instructions of the manufacturer of the Data Ingestor, and execute the command again.
7	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
8	KAQM32005-E	An attempt to perform an operation on the system file (<*system file*>) has failed.	The operation on the system file might have failed.	Check whether a failure has occurred in the OS disk. After the check, execute the command again. If the error reoccurs, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM32039-E	A system error occurred.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM32053-E	No HBA cards are inserted for which the specified parameter can be set.	No HBA cards are inserted for which the specified parameter can be set.	Check that a HBA card for which the specified parameter can be set is inserted.

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2.39 Installing an External Program (externalpgminst)

The command installs a vendor-provided program file (that is obtained beforehand) on the OS.

NOTE: Execute this command only when you are instructed to do so.

2.39.1 Command line

This command uses the following command lines.

- To install an external program:
  externalpgminst pgm-name archive-file-name

- To output the command format on the standard output:
  externalpgminst -h

Table 2.39.1-1 shows the description of each option.

Table 2.39.1-1 Description of the Options

No.	Option	Description	Remark
1	pgm-name	Specify the name of the external program to be installed.	Specify either of the following: HBAnywhere : For updating the HBA firmware MegaCLI : For monitoring the RAID controller
2	archive-file-name	Specify the file name of the vendor-provided program.	—
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.39.2 Execution procedure

This subsection describes the procedure for executing the externalpgminst command.

NOTE: Before you execute this command, obtain the target vendor-provided program file from your system administrator and store it on the maintenance PC.

(1) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.39.2-1 to upload the vendor-provided program file to the home directory for maintenance personnel (/home/service) (in the following example, MegaCLI is installed).
For details about file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
The following figure shows an example of using pscp.

```
C:\>pscp -scp -unsafe C:\work\4.00.11_Linux_MegaCLI.zip service@10.0.0.50:
```

Figure 2.39.2-1 Uploading an External Program File to the Home Directory for Maintenance Personnel

(2) Log in to the target node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) In accordance with "Figure 2.39.2-2 Example of Executing externalpgminst", specify "MegaCLI" and the name of the file uploaded in step (1) as options and execute the externalpgminst command.
When you install HBAnyware, specify "HBAnyware" and the file name as options and execute the command.
If a message ID is displayed, refer to Maintenance Tool "2.39.3 Command termination messages and action to be taken" (MNTT 02-2310) and take appropriate action.
After you complete the action, perform step (1) and later again.

```
$sudo externalpgminst MegaCLI 4.00.11_Linux_MegaCLI.zip
```

Figure 2.39.2-2 Execution Example of the externalpgminst Command

(4) After you complete installing the external program, use the externalpgmlist command to check whether the specified program is installed.
For details about the externalpgmlist command, refer to Maintenance Tool "2.40 Checking the Installation Status of External Programs (externalpgmlist)" (MNTT 02-2330).

(5) As shown in Figure 2.39.2-3, delete the vendor-provided program file uploaded in step (1).
For details about how to delete a file, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$sudo rmfile 4.00.11_Linux_MegaCLI.zip
```

Figure 2.39.2-3 Deleting the Uploaded File

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2.39.3 Command termination messages and action to be taken

When you execute the externalpgmlist command, messages might be displayed. Table 2.39.3-1 lists the action to be taken for each message ID.

Table 2.39.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM14165-E	The specified file does not exist in the home directory. (file name = <*file-name*>)	The specified file does not exist in the home directory.	Check whether the specified file exists in the home directory for maintenance personnel (/home/service). If the file does not exist, upload the file to the home directory and execute the command again. If the file exists, execute the command again. If the same error reoccurs after you execute the command again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.39.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
5	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM38012-E	The specified file format is invalid.	The format of the specified file is not appropriate for the command.	Check the file to be installed. Specify the correct file and execute the command again.

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2.40 Checking the Installation Status of External Programs (externalpgmlist)

The command displays the installation status of the vendor-provided programs that you obtained.

NOTE: Execute this command only when you are instructed to do so.

2.40.1 Command line

This command uses the following command lines.

- To display the installation status:
  externalpgmlist [pgm-name]

- To output the command format on the standard output:
  externalpgmlist -h

Table 2.40.1-1 shows the description of each option.

Table 2.40.1-1 Description of the Options

No.	Option	Description	Remark
1	pgm-name	Specify the name of the external program whose installation status you want to check. If you do not specify any name, the command outputs the installation status of all external programs.	Specify one of the following: HBAnywhere : For updating the HBA firmware MegaCLI : For monitoring the RAID controller None : The command displays the installation status of both HBAnyware and MegaCLI.
2	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.40.2 Output format

The output format for the externalpgmlist command execution is shown in Figure 2.40.2-1 “Output Format for externalpgmlist Command”.

```
Output format for externalpgmlist

[external-program-name]
    Status                  :  [installation-status]
    Install file            :  [name-of-installed-file]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.40.2-1 Output Format for externalpgmlist Command

NOTE: The “externalpgmlist” command outputs the information on the external programs that are installed by using the “externalpgminst” command.
Therefore, the standard installed MegaCLI is not displayed by the “externalpgmlist” command.

Table 2.40.2-1 describes the details about the items in “Figure 2.40.2-1 Output Format for externalpgmlist Command”.

Table 2.40.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[external-program-name]	Displays the name of the external program whose installation status is output. HBAnywhere MegaCLI
2	[installation-status]	Displays the installation status of the external program. Installed : The program is installed. Not installed : The program is not installed.
3	[name-of-installed-file]	Displays the name of the installed file when the installation status is “Installed”. Displays “-” when the installation status is “Not installed”.

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2.40.3 Execution procedure

This subsection describes the procedure for executing the externalpgmlist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.40.3-1 shows an example of executing the externalpgmlist command.
If a message ID is displayed, refer to Maintenance Tool "2.40.4 Command termination messages and action to be taken" (MNTT 02-2360).
Perform a propter action and execute the command again.

```
$ sudo externalpgmlist
[HBAnywhere]
    Status              :  Installed
    Install file        :  elxlinuxcorekit-4.1a36-1.x86_64.rpm

[MegaCLI]
    Status              :  Not installed
    Install file        :  --
```

Figure 2.40.3-1 Execution Example of the externalpgmlist Command

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2.40.4 Command termination messages and action to be taken

When you execute the externalpgmlist command, messages might be displayed. Table 2.40.4-1 lists the action to be taken for each message ID.

Table 2.40.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.41 Configuring a Private Maintenance Port (pmctl)

The command sets a Private Maintenance port and lists the port settings.

NOTE: Usually, use the command only to display the port settings.
Do not use this command to configure a port unless otherwise instructed to do so.

2.41.1 Command line

This command uses the following command lines.

- To display interface information of the Private Maintenance port settings of the IPv4 and IPv6 addresses:
  pmctl
- To display interface information of the Private Maintenance port of the IPv4 address:
  pmctl -p v4
- To set the interface of Private Maintenance port of the IPv4 address (In the cluster configuration):
  pmctl [-p v4] -a fixed_ip -n netmask interface
- To set the interface of Private Maintenance port of the IPv4 address (In the single node configuration):
  pmctl [-p v4] -a ip_address –n netmask interface
- To display interface information of the Private Maintenance port of the IPv6 address:
  pmctl -p v6
- To set interface information of the Private Maintenance port of the IPv6 address (In the cluster configuration) (3.2.0-XX or earlier):
  pmctl -p v6 -a fixed_ip -n netmask interface
- To set interface information of the Private Maintenance port of the IPv6 address (In the single node configuration) (3.2.0-XX or earlier):
  pmctl -p v6 -a ip_address -n netmask interface
- To set interface information of the Private Maintenance port of the IPv6 address (In the cluster configuration) (3.2.1-XX or later):
  pmctl [-p v6] -a fixed_ip -n netmask interface
- To set interface information of the Private Maintenance port of the IPv6 address (In the single node configuration) (3.2.1-XX or later):
  pmctl [-p v6] -a ip_address ‑n netmask interface
- To release the IPv6 address:
  pmctl -p v6 -delete interface
- To output the command format on the standard output:
  pmctl -h

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Table 2.41.1-1 shows the description of each option.

Table 2.41.1-1 Description of the Options

No.	Option	Description	Remark
1	-p v4	Specify when setting/displaying the IPv4 interface. This option can be omitted in setting the interface. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	—
2	-p v6	Specify when setting/displaying the IPv6 interface. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	This option must be specified in case IPv6 is set when the OS version is 3.2.0-XX or earlier. This option can be omitted when the OS version is 3.2.1-XX or later.
3	[In the cluster configuration] -a <*fixed_ip*> [In the single node configuration] -a <*ip_address*>	Specify the IP address of the Private Maintenance LAN port in the node where you enter the command. In setting the IPv6, display the IP address in a square bracket "[]".	IPv6 setting example [fe80::1:50]
4	-n <*netmask*>	Specify the netmask (prefix length in case of the IPv6). The specified value is used as the netmask for the IP address specified in the -a option.	The prefix length can be specified within the range from 0 to 128.
5	*interface*	Specify the name of the Private Maintenance port you want to configure.	Specify pm0.
6	--delete	Releases IPv6 address information set for the interface. This option can be specified if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	Do not specify this option unless otherwise instructed. In executing this option, the confirmation message KAQM05200-Q is output.
7	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.41.2 Execution procedure

This subsection describes the procedure for executing the pmctl command.
If you want to list interface information of the Private Maintenance port, refer to 2.41.2 (1) Displaying interface information of the Private Maintenance port.
If you want to configure the interface of a Private Maintenance port, refer to Maintenance Tool "2.41.2 (2) Setting a Private Maintenance port interface" (MNTT 02-2400).

(1) Displaying interface information of the Private Maintenance port

The output format for the pmctl command execution is shown in Figure 2.41.2-1 "Output Format for pmctl Command".

```
Output format for pmctl (In the cluster configuration)

Interface              :  [interface]
[IPv4]
 Fixed IP addr         :  [fixedIP]
 Netmask               :  [netmask]
[IPv6]
 Fixed IP addr         :  [v6fixedIP]
 Prefix length         :  [prefixlen]

Output format for pmctl (In the single node configuration)

Interface              :  [interface]
[IPv4]
 IP address            :  [IPaddress]
 Netmask               :  [netmask]
[IPv6]
 IP address            :  [v6IPaddress]
 Prefix length         :  [prefixlen]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.41.2-1 Output Format for pmctl Command

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Table 2.41.2-1 describes the details about the items in “Figure 2.41.2-1 Output Format for pmctl Command”.

Table 2.41.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[interface]	Displays the name of the interface. Displays as fixed pm0.
2	[IPv4] (*1)	Displays the setting title of the IPv4.
3	(In the cluster configuration) [fixedIP] (In the single node configuration) [IPaddress]	Displays the fixed IPv4 address that you specified.
4	[netmask]	Displays the specified netmask.
5	[IPv6] (*1)	Displays the setting title of the IPv6. This is not displayed if the IPv6 is not set.
6	(*1) (In the cluster configuration) [v6fixedIP] (In the single node configuration) [v6IPaddress]	Displays the fixed IPv6 address which is set. This is not displayed if the IPv6 is not set. The IPv6 address is displayed without the square bracket (“[]”) specified at the time of setting.
7	[prefixlen] (*1)	Displays the prefix length which is set. This is not displayed if the IPv6 is not set.

*1: This item is displayed if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

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Execute the pmctl command according to the following procedure.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) An execution example of pmctl command when the OS version is earlier than 3.1.0-XX (in the state of clustering) is shown in Figure 2.41.2-2, an execution example when the OS version is 3.1.0-XX or later (in the state of clustering) is shown in Figure 2.41.2-3.
An execution example of pmctl command when the OS version is earlier than 3.1.0-XX (in the case of single node configuration) is shown in Figure 2.41.2-4, an execution example of when the OS version is 3.1.0-XX or later (in the case of single node configuration) is shown in Figure 2.41.2-5.
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
If a message ID is displayed, refer to Maintenance Tool "2.41.3 Command termination messages and action to be taken" (MNTT 02-2410).
Perform a propter action and execute the command again.

- In the cluster configuration

```
$ sudo pmctl
Interface              :  pm0
  Fixed IP addr        :  10.0.0.100
  Netmask              :  255.255.255.0
```

Figure 2.41.2-2 Execution Example of the pmctl Command (when the OS version is earlier than 3.1.0-XX)

```
$ sudo pmctl
Interface              :  pm0
[IPv4]
 Fixed IP addr         :  10.0.0.100
 Netmask               :  255.255.255.0
[IPv6]
 Fixed IP addr         :  fe80::1:50
 Prefix length         :  64
```

Figure 2.41.2-3 Execution Example of the pmctl Command (when the OS version is 3.1.0-XX or later and IPv6 address is set)

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- In the case of single node configuration

```
$ sudo pmctl
Interface              :  pm0
  IP address           :  10.0.0.100
  Netmask              :  255.255.255.0
```

Figure 2.41.2-4 Execution Example of the pmctl Command (when the OS version is earlier than 3.1.0-XX)

```
$ sudo pmctl
Interface              :  pm0
[IPv4]
 IP address            :  10.0.0.100
 Netmask               :  255.255.255.0
```

Figure 2.41.2-5 Execution Example of the pmctl Command (when the OS version is 3.1.0-XX or later and IPv6 address is not set)

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(2) Setting a Private Maintenance port interface

(a) In the cluster configuration, check whether a cable is connected between the Private Maintenance port and the switch. However, if no switch exists, confirm that the Private Maintenance port of the target node is directly connected to the maintenance PC by the cable.
In the single node configuration, check whether a cable is connected between the private maintenance port and the maintenance PC directly.

(b) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(c) Execute pmctl command in accordance with Figure 2.41.2-6 Execution Example of the pmctl Command (in case IPv4 is set)" in case IPv4 is set. Execute the pmctl command in accordance with "Figure 2.41.2-7 Execution Example of the pmctl Command (in case IPv6 is set)" in case IPv6 is set. However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
If a message ID is displayed, refer to Maintenance Tool "2.41.3 Command termination messages and action to be taken" (MNTT 02-2410).
Perform a propter action and execute the command again.

```
$ sudo pmctl -a 10.0.0.100 -n 255.255.255.0 pm0
```

Figure 2.41.2-6 Execution Example of the pmctl Command (in case IPv4 is set)

```
$ sudo pmctl -p v6 -a [fe80::1:50] -n 64 pm0
```

Figure 2.41.2-7 Execution Example of the pmctl Command (in case IPv6 is set)

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NOTE:
- In the cluster configuration, specify a network segment that differs from the network segments containing the Heartbeat port, Management port, BMC port, and Data port.
- When IPv4 is set in the single node configuration, it must be set to be the same segment with the BMC port.
- When you change the network segment of the Private Maintenance port, you need to confirm that the IP address of the maintenance port on the maintenance PC belongs to the network segment of the Private Maintenance port. After you complete the settings, change the IP address of the maintenance port and confirm that it is different from the IP address of the Private Maintenance port. For details about how to change the IP address of the maintenance port, refer to Maintenance Tool "1.2.2 Setting the IP addresses of the maintenance PC" (MNTT 01-0040).
- As the network segment of the Private Maintenance port set for the IPv4, basically select "10.0.0.XXX", "192.168.0.XXX", "192.168.233.XXX", "172.23.211.XXX", or "10.197.181.XXX". However, if these network segments are already being used, contact the system administrator and obtain an available network segment.
- Set the IPv6 within the range of link local unicast address from "fe80::1:0/64" to "fe80::1:ff/64".
- As the interface name, always specify "pm0".

(d) When you complete the settings, the communication is disconnected. Use the IP address specified in step (c) to reconnect and log it in.

(e) Use the pmctl command to check the settings.
For details about how to use the pmctl command to check the settings, refer to Maintenance Tool "2.41.2 (1) Displaying interface information of the Private Maintenance port" (MNTT 02-2380).

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2.41.3 Command termination messages and action to be taken

When you execute the pmctl command, messages might be displayed. Table 2.41.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.41.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM05042-E	The interface specification is invalid.	The specified value is incorrect.	Check the specified data and specify valid data.
3	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	An attempt to read the file to be used for the requested processing failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM05056-E	An attempt to write to the file to be used for the requested processing has failed.	An attempt to write to the file to be used for the requested processing failed.	
5	KAQM05115-E	The format of the specified IP address is invalid. (IP address = <*IP address*>)	The format of the specified IP address is incorrect.	Use the appropriate format to specify the IP address.
6	KAQM05158-E	The specified IP address cannot be used because it is already in use. (IP address = <*IP address*>)	The specified IP address is already used.	Check the port settings. If the specified IP address is already used, specify another IP address.
7	KAQM05159-E	The network identified by the specified IP address and netmask cannot be used because it is already in use. (network address = <*network address*>)	The network that is identified by the specified IP address and netmask is already used.	Check the port settings. If the network that is identified by the specified IP address and netmask is already used, specify another IP address or netmask.
8	KAQM05188-E	The IPv4 address in the Private Maintenance port cannot be removed.	The IPv4 address in the Private Maintenance port cannot be released.	Check the specified data and specify valid data.
9	KAQM05194-E	The entered prefix length is invalid.	An error exists in the entered Prefix length.	Specify a number in the range from 0 to 128 and reexecute.
10	KAQM05198-E	No IPv6 address is set.	The IPv6 address is not set.	Check the specified data and specify valid data.
11	KAQM05200-Q	The interface in the IPv6 address will be released. Do you want to proceed? (y/n)	The interface in the IPv6 address will be released. Do you want to continue the processing?	Enter "y" if you release the address and enter "n" if you cancel the processing.
12	KAQM05211-E	The protocol version of the specified IP addresses and netmask (prefix length) do not match.	The protocol version of the specified IP address or netmask (prefix length) is not unified.	Check the specified data and unify the protocol version of the data.

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Table 2.41.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
13	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
15	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
16	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
17	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
18	KAQM14150-E	An error occurred in the system.	The processing for determining the execution environment failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
19	KAQM14174-E	The specified IP address cannot be set. (specified value = <*specified value*>)	The specified IP address is a special address which cannot be set.	Confirm the specified value and reexecute.

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2.42 Acquisition of Time/ Time Zone (timeget)

This command displays the present time and the information of Time zone of this side node.

2.42.1 Command line

This command uses the following command lines.

- To display the present time:
  timeget
- To display the information of Time zone:
  timeget -z
- To display UTC (Coordinated Universal Time):
  timeget -u
- To output the command format on the standard output:
  timeget –h

Table 2.42.1-1 shows the description of each option.

Table 2.42.1-1 Description of the Options

No.	Option	Description	Remark
1	-z	Specify this option to output the information of Time zone.	The present time is not output when this option is specified.
2	-u	Specify this option to output the UTC.	—
3	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.42.2 Output format

The output format for the timeget command execution is shown in Figure 2.42.2-1 “Output Format for timeget Command”.

```
Output format for timeget

[Display the present time]
$ sudo timeget
[wday] [Month] [DD] [hh:mm:ss] [ZZZ] [YYYY]]

[Display the information of Time zone]
$ sudo timeget -z
Time zone : [timezone]

[Display UTC]
$ sudo timeget -u
[wday] [Month] [DD] [hh:mm:ss] UTC [YYYY]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.42.2-1 Output Format for timeget Command

Table 2.42.2-1 describes the details about the items in “Figure 2.42.2-1 Output Format for timeget Command”.

Table 2.42.2-1 Description of the Items in the Output Format

No.	Item	Description	Remark
1	[wday]	Display the 3 letters abbreviation that indicating a day of the week.	Sun, Mon, Tue, Wed, Thu, Fri, Sat
2	[Month]	Display the 3 letters abbreviation that indicating a month.	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
3	[DD]	Display the number that indicating a date. It is displayed in fixed two-digit number including 0.	
4	[hh:mm:ss]	Display the time indicating hours, minutes, and seconds. The number is displayed in fixed two-digit number including 0.	Example: 02:12:30
5	[ZZZ]	Display the abbreviation that indicating Time zone.	Example: JST
6	[YYYY]	Display the number of years. It is displayed in fixed four-digit number.	
7	[timezone]	Display the information of Time zone that has been set.	Example: Asia/Tokyo

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2.42.3 Execution procedure

This subsection describes the procedure for executing the timeget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.42.3-1 shows an example of executing the timeget command.
If a message ID is displayed, refer to Maintenance Tool "2.42.4 Command termination messages and action to be taken" (MNTT 02-2460).
Perform a propter action and execute the command again.

```
$ sudo timeget
Fri Feb 12 19:52:10 JST 2010

$ sudo timeget -z
Time zone : Asia/Tokyo

$ sudo timeget
Fri Feb 12 10:52:10 UTC 2010
```

Figure 2.42.3-1 Execution Example of the timeget Command

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2.42.4 Command termination messages and action to be taken

When you execute the timeget command, messages might be displayed. Table 2.42.4-1 lists the action to be taken for each message ID.

Table 2.42.4-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
4	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
5	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
7	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.

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2.43 Time Setting (timeset)

This command set the present time of this side node.

2.43.1 Command line

This command uses the following command lines.

- To set the present time:
  timeset [YYYYMMDDhhmm(ss)]

- To output the command format on the standard output:
  timeset -h

Table 2.42.1-1 shows the description of each option.

Table 2.43.1-1 Description of the Options

No.	Option	Description	Remark
1	[YYYYMMDDhhmm(ss)]	Specify the present time. year, month, date, hour, minute, and (second). The specification of second is optional. When it is omitted, it is displays as 00.	Unless otherwise special instruction, this option is not necessary to be set.
2	-h	Specify this option to output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.43.2 Execution procedure

This subsection describes the procedure for executing the timeset command.

NOTE:
- Confirm with the system administrator in advance whether the operation is performed in the Physical node. If it cannot be confirmed, refer to Maintenance Tool "3.4 Operation determination of the Physical node" (MNTT 03-0110) and determine the operational method.
- If a cluster is constructed, request the system administrator to failover the Virtual Server to the other node when operating the resource group and Virtual Server of the node that sets the time, and change the "Node Status" of the node that sets the time to "INACTIVE (stopping node) in advance.
  For the reference place in User's Guide describing the details about failover/failback of a resource group, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Changing the execution node of a resource group'' (GENE 00-0040)", and for the reference place in User's Guide describing the details about stopping a node, refer to "General 'Reference Place in User's Guide for Operating Procedures Table 4 'Stopping and starting a node'' (GENE 00-0040)".
  If the system administrator is not present, contact the system administrator, the maintenance personnel acquires the above-mentioned permission and executes the processing.
  For the method of executing the processing, refer to Maintenance Tool "3.1 Failover and Node Termination to Execute the OS stop or the OS reboot" (MNTT 03-0000).

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the clstatus command and check the status of the node with the OS you want to change the setting.
Check whether the node status is INACTIVE.
For details about how to check node status, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

NOTE: Step (2) is not necessary when no cluster is created or in the single node configuration.

(3) Specify the present time in accordance with Figure 2.43.2-1, and then execute the timeset command.
If a message ID other than KAQM05153-Q is displayed, refer to Maintenance Tool "2.43.3 Command termination messages and action to be taken" (MNTT 02-2500).
Perform a propter action and execute the command again.

```
$sudo timeset 201002181004
```

Figure 2.43.2-1 Execution Example of the timeset Command

NOTE: Unless otherwise special instruction, this specifying seconds is not necessary.

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(4) When you perform step (3), the confirmation message (KAQM05153-Q) shown in Figure 2.43.2-2 is displayed. Enter y to execute the processing.
When you enter n, the processing is canceled.
If a message ID is displayed, refer to Maintenance Tool "2.43.3 Command termination messages and action to be taken" (MNTT 02-2500).
Take appropriate action and perform step (3) and later again.

```
$ sudo timeset 201002181004
KAQM05153-Q If you change the node time, you must then restart the OS on both
nodes. Do you want to continue? (y/n) y
```

Figure 2.43.2-2 Confirmation Message (KAQM05153-Q) of executing timeset

(5) To enable the settings, reboot the OS.
For details about how to reboot the OS, refer to Maintenance Tool "2.29 Rebooting the OS of This Side Node (nasreboot)" (MNTT 02-1790).

(6) After completion of OS reboot, execute timeget command without specifying any option, and then check if the time information that has been set is reflected.
For details about the timeget command, refer to Maintenance Tool "2.42 Acquisition of Time/ Time Zone (timeget)" (MNTT 02-2430).

(7) If it is performed failover, request the system administrator to set the "Node Status" of the restarted node to "UP" (starting node), and to perform failback the resource group, which has been performed failover to the restarted node.
However, when the system administrator is absent, the maintenance personnel should contact to system administrator and get the permission from him/her to execute this operation. For the execution procedure, refer to Maintenance Tool "3.2 Failback and Start of Node After Starting the OS" (MNTT 03-0030).

NOTE: Step (7) is not necessary when this command is executed while working.

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2.43.3 Command termination messages and action to be taken

When you execute the timeset command, messages might be displayed. Table 2.43.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.43.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM05089-E	This node has not stopped.	This side node is not in the state of INACTIVE. (Different message is displayed if the OS version is 2.1.1-XX or earlier.)	Request the system administrator to make INACTIVE the state of node, and then retry the operation.
3	KAQM05112-E	The entry for the current time is invalid.	The input value of the specified present time is incorrect.	Check the contents of the specified present time, and then retry the operation.
4	KAQM05153-Q	If you change the node time, you must then restart the OS on both nodes. Do you want to continue? (y/n)	The setting information is changed. Do you want to continue?	If you want to change the setting, enter "y". If you want to cancel the processing, enter "n".

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Table 2.43.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
5	KAQM14101-E	In the cluster, nodes that cannot synchronize exist.	There is a problem in the communication processing between nodes.	Check if the LAN cable is connected. It is possible to think that the synchronization process could not be completed because the load to the node in the cluster was high. Request the system administrator to check if the load of the node within the cluster returns to the normal status, and then retry the operation.
6	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
8	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
9	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
11	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.

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2.45 Forced Release of LU Access Protection for the Cluster Management LU and All Users LU (forcelurelease)

Forced failover is a behavior to prevent the double mount (it leads to destruction of the user data) of the file systems at the time of failover, by executing LU access protection for the cluster management LU and the all user LUs.

This command releases this access protection forcibly.

NOTE:
- This is a command used only when the execution instruction is given during the operation. Please do not use it in other cases or the user data might be broken.
- This is not supported in the single node configuration.

2.45.1 Command line

This command uses the following command lines.

- To execute the forced release of the LU access protection:
  forcelurelease

- To display the command format on the standard output:
  forcelurelease -h

Table 2.45.1-1 shows the description of each option.

Table 2.45.1-1 Description of the Options

No.	Option	Description	Remark
1	-h	Specify this option to output the command format to the standard output.	KAQM14136-I and KAQM06115-I are displayed at the time of execution.

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2.45.2 Execution procedure

This subsection describes the procedure for executing the forcelurelease command.
When this procedure is executed, it is assumed that “KAQG72030-E” SIM message is detected in either of the nodes.

(1) Log in to the node 0 via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) Execute the syseventlist command and check if the SIM message ID of “KAQG72030-E” is displayed or not.
For details about how to confirm SIM messages, refer to Maintenance Tool “2.6 Displaying SIMs on This Side (syseventlist)” (MNTT 02-0360).
If the message is displayed, log off from the node0 and log in to the node1, and proceed to step (3). For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).
If the message is not displayed, proceed to step (3).

(3) Execute the clstatus command and check if the message of “KAQM06116-E” is displayed while executing a command.
For details about how to confirm the messages, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).
If the message is displayed, proceed to step (4).
If it is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

(4) Execute the forcelurelease command in accordance with the execution example as in Fig. 2.45.2-1.
If a message ID other than KAQM06114-Q is displayed, take measures with reference to Maintenance Tool “2.45.3 Command termination messages and action to be taken” (MNTT 02-2590).
After completing the measures, retry the operation.

```
$ sudo forcelurelease
```

Figure 2.45.2-1 Execution Example of the forcelurelease Command

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(5) When the step (4) is executed, the confirmation message (KAQM06114-Q) is displayed as shown in Figure 2.45.2-2 “Confirmation Message (KAQM06114-Q) of executing forcelurelease”. Enter “y” to start execution. The forced release of the LU access protection starts.
To cancel the execution, enter “n”.
When a message ID other than KAQM06117-I is displayed, refer to Maintenance Tool “2.45.3 Command termination messages and action to be taken” (MNTT 02-2590).
Perform a proper action and repeat the procedure from the step (2).

```
$ sudo forcelurelease
KAQM06114-Q If you execute this command while the status of the cluster is
UNKNOWN or DISABLE or while the status of the other node is UNKNOWN or
DOWN, user data might become corrupted. Are you sure you want to forcibly release
the access protection on the cluster management LU and the user LUs? (y/n) y
```

Figure 2.45.2-2 Confirmation Message (KAQM06114-Q) of executing forcelurelease

(6) After execution of step (5), the message ID KAQM06117-I is displayed in case of normal termination. Reboot the OS in accordance with the message. For details about reboot procedure, refer to Maintenance Tool “2.29 Rebooting the OS of This Side Node (nasreboot)” (MNTT 02-1790).

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2.45.3 Command termination messages and action to be taken

When you execute the forcelurelease command, messages might be displayed. Table 2.45.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.45.3-1 Message IDs and Action to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06113-E	Access protection on one or more LUs failed to be forcibly released.	An error might be occurred on the FC path or on the disk array subsystem.	Check the status of the FC path. If there is abnormal in the FC path status, recover it and retry the operation. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06114-Q	If you execute this command while the status of the cluster is UNKNOWN or DISABLE or while the status of the other node is UNKNOWN or DOWN, user data might become corrupted. Are you sure you want to forcibly release the access protection on the cluster management LU and the user LUs? (y/n)	Execute the forced release of the LU protection. Do you want to continue?	To execute the forced release of the Access LU protection, enter "y". To cancel it, enter "n".
4	KAQM06115-I	This command will forcibly release the access protection on one or more LUs. If you execute this command while the status of the cluster is UNKNOWN or DISABLE or while the status of the other node is UNKNOWN or DOWN, user data might become corrupted.	This command will forcibly release the access protection on one or more LUs. If you execute this command while the status of the cluster is UNKNOWN or DISABLE or while the status of the other node is UNKNOWN or DOWN, user data might become corrupted.	—

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Table 2.45.3-1 Message IDs and Action to be Taken (2/2)

No.	Message ID	Message	Description	Action
5	KAQM06117-I	The operation was successful in forcibly releasing the access protection on one or more LUs. Restart the OS of the node to which the KAQG72030-E message was not output.	The forcibly releasing of the LU access protection was completed successfully. Restart the OS of the node to which the KAQG72030-E message was not output.	Restart the OS of the node to which the KAQG72030-E message was not output.
6	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
8	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
9	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
11	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
12	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.46 Confirming the Built-in RAID Controller Firmware Version (internalraidfwget)

This command displays the firmware version information of the built-in RAUD controller.

2.46.1 Command line

This command uses the following command line.

- To confirm the firmware version:
  internalraidfwget

2.46.2 Output format

The output format for the internalraidfwget command execution is shown in Figure 2.46.2-1 “Output Format for internalraidfwget command”.

```
Output format for internalraidfwget

FW Version        : [Version]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.46.2-1 Output Format for internalraidfwget Command

Table 2.46.2-1 describes the details about the items in “Figure 2.46.2-1 Output Format for timeget Command”.

Table 2.46.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[Version]	Displays the firmware version of the built-in RAID controller.

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2.46.3 Execution procedure

This subsection describes the procedure for executing the internalraidfwget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.46.3-1 shows an example of executing internalraidfwget command.
If the version is not displayed, or an error message is displayed on the screen, refer to Maintenance Tool "2.46.4 Command termination messages and action to be taken" (MNTT 02-2630).

```
$ sudo internalraidfwget
FW Version        : 1.22.02-0612
```

Figure 2.46.3-1 Execution Example of the internalraidfwget Command

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2.46.4 Command termination messages and action to be taken

When you execute the internalraidfwget command, messages might be displayed. Table 2.46.4-1 lists the action to be taken for each message ID.

Table 2.46.4-1 Message IDs and Action to be Taken

No.	Massage	Description	Action
1	Version is displayed.	The operation is terminated completely.	—
2	• Version is not displayed. • An error message is displayed.	Failed to get the firmware version.	Check the following contents. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.47 Updating the Built-in RAID Controller Firmware (internalraidfwupdate)

This command executes the update of a firmware of built-in RAID controller by using the firmware file provided by the vendor.

2.47.1 Command line

This command uses the following command line.

- To update the firmware:
  internalraidfwupdate firmware file name

Table 2.47.1-1 shows the description of each option.

Table 2.47.1-1 Description of the Options

No.	Option	Description	Remark
1	Firmware file name	Specifies the file for updating firmware.	—

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2.47.2 Execution procedure

This subsection describes the procedure for executing the internalraidfwupdate command.

NOTE: Acquire the firmware file for the updating and store it in the maintenance PC beforehand.

(1) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.47.2-1 to upload the firmware file in the home directory (/home/service) for the maintenance personnel.
For details about uploading file, refer to Maintenance Tool "1.3.5 Commands used for transferring files (1) Uploading files to the OS" (MNTT 01-0230).
This section describes an example when using pscp.

```
C:\>pscp -scp -unsafe C:\work\RAID_FRMW_LX_R216024.BIN service@10.0.0.50:
```

Figure 2.47.2-1 Uploading to the home directory for the maintenance personnel

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Confirm the current firmware version with the internalraidfwget command.
For details about internalraidfwget command, refer to Maintenance Tool "2.46 Confirming the Built-in RAID Controller Firmware Version (internalraidfwget)" (MNTT 02-2610).

(4) In accordance with Figure 2.47.2-2 Example of executing the internalraidfwupdate command, put the file name uploaded at the step (1) as an option, and then execute internalraidfwupdate command.
When a message is displayed, take measures with reference to Maintenance Tool "2.47.3 Command termination messages and action to be taken" (MNTT 02-2660).
After completing measures, retry the operation from the step (1).

```
$sudo internalraidfwupdate RAID_FRMW_LX_R216024.BIN
```

Figure 2.47.2-2 Execution Example of the internalraidfwupdate Command

(5) After the completion of the updating, delete the firmware file uploaded at the step (1) as described in Figure 2.47.2-3.
For details about file deletion, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$sudo rmfile RAID_FRMW_LX_R216024.BIN
```

Figure 2.47.2-3 Deleting the uploaded file

(6) Reboot the OS. For details about rebooting OS, refer to Maintenance Tool "2.29 Rebooting the OS of This Side Node (nasreboot)" (MNTT 02-1790).

(7) After completing the reboot process, confirm that the firmware version is changed with the internalraidfwget command.
For details about the internalraidfwget command, refer to Maintenance Tool "2.46 Confirming the Built-in RAID Controller Firmware Version (internalraidfwget)" (MNTT 02-2610).
If the firmware is not changed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.47.3 Command termination messages and action to be taken

When you execute the internalraidfwupdate command, messages might be displayed. Table 2.47.3-1 lists the action to be taken for each message ID.

Table 2.47.3-1 Message IDs and Action to be Taken

No.	Message	Description	Action
1	None	The firmware update process is terminated completely.	—
2	A error message is displayed.	Abnormal termination occurs on the firmware update process.	Check the following contents. 1 Refer to Maintenance Tool "2.47.1 Command line" (MNTT 02-2640), and then check if the specified command line is correct or not. 2 Check if the firmware file to be updated is stored directly under the home directory for the maintenance personnel (/home/service). 3 Check if the specified file name is correct. 4 Retry the operation after confirming the above contents. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.48 Starting the Cluster (clstart)

This command activates the cluster and shifts the “Node status” of the both nodes that are belonging to the cluster to “UP”.

NOTE:
- This command is available to execute only when the cluster status is “INACTIVE”.
- This is not supported in the single node configuration.
- This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

2.48.1 Command line

This command uses the following command lines.

- To start the cluster:
  clstart

- To display the command format on the standard output:
  clstart -h

Table 2.48.1-1 shows the description of each option.

Table 2.48.1-1 Command Options

No.	Option	Description	Remarks
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.48.2 Execution procedure

This subsection describes the procedure for executing the clstart command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute starting the cluster. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute clstatus command, and check that "Cluster status" is "INACTIVE". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(3) Execute clstart command in accordance with Figure 2.48.2-1 Execution example of clstart command.
When a message is displayed, take measures with reference to Maintenance Tool "2.48.3 Command termination messages and action to be taken" (MNTT 02-2690).
After completing the measures, retry the operation from (1).

```
$ sudo clstart
```

Figure 2.48.2-1 Execution Example of the clstart Command

(4) After executing clstatus command, check that "Cluster Status" becomes "ACTIVE," and "Node Status" of both nodes becomes "UP". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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2.48.3 Command termination messages and action to be taken

When you execute the clstart command, messages might be displayed. Table 2.48.3-1 lists the action to be taken for each message ID.

Table 2.48.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM06003-W	The product or license is not synchronized in the cluster.	The product or license is not synchronized in the cluster.	Request the system administrator to take measures for the warning message, KAQM06025-W, KAQM06027-W, or KAQM06105-W that is displayed on em_alertfile.
2	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
3	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of “KAQG7xxxx” is shown in the both nodes. When the SIM of “KAQG7xxxx” is displayed, take measures in accordance with the message. When the SIM of “KAQG7xxxx” is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget) ” (MNTT 02-1300).
4	KAQM06051-E	The cluster is not stopped.	The cluster is not in the state of “INACTIVE”.	Make sure that the cluster status is “INACTIVE”, and then retry the operation.

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Table 2.48.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
5	KAQM06108-W	The cluster could be started, but whether licenses are consistent could not be confirmed.	The cluster could be started, but whether licenses are consistent or not could not be confirmed.	The communication might have failed because the LAN cable was disconnected or the other side node of the cluster was not running. Check that the LAN cable is connected or the other side node is in the state of running. After restoring the connection for the other side node, check the consistency of the license of both nodes.
6	KAQM06144-E	An attempt to update resource information failed.	Updating resource information fails.	Execute failover or failback. When an error occurs again, a new installation is needed to restore. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
9	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
10	KAQM14132-E	No license is set to allow use of basic functionality.	The license to use basic function is not set (The message is different in the case the OS version is 3.0.1-XX or earlier.)	Set the license. Either request the system administrator to do it or execute the setting by the command. For the method of setting the license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).

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Table 2.48.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
11	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message “Management IP address is not set” is not output.
12	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
13	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
14	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
15	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
16	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.49 Stopping the Cluster (clstop)

This command stops a cluster and shifts the “Node status” of the both nodes that are belonging to the cluster to “INACTIVE”.

NOTE:
- This command is available to execute only when the cluster status is “ACTIVE”.
- Because this command execution stops the service, report it to the system administrator and execute this operation after the system administrator notifies to the end user.
- This is not supported in the single node configuration.
- This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool “2.34 Displaying the Version of the OS (versionlist)” (MNTT 02-2060).

2.49.1 Command line

This command uses the following command lines.

- To stop the cluster:
  clstop [-y]

- To stop the cluster forcibly:
  clstop -f [-y]

- To display the command format on the standard output:
  clstop -h

Table 2.49.1-1 shows the description of each option.

Table 2.49.1-1 Command Options

No.	Option	Description	Remarks
1	-f	Specifies when the forced stop of a cluster is executed. When this option is specified, the operation is executed regardless of the cluster status. However, if the cluster status is “INACTIVE”, it ends with an error.	For the details of cluster status, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040). Do not add this option unless otherwise instructed to do so.
2	-y	Inhibits the output of confirmation messages.	Do not add this option unless otherwise instructed to do so.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of execution.

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2.49.2 Execution procedure

This subsection describes the procedure for executing the clstop command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute stopping the cluster. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute clstatus command, and check that the status is in the following. For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

- "Cluster status" is in "ACTIVE".
- "Resource group status" is "Online/No error", "Offline/No error", or "Online Maintenance/No error".

(3) Execute clstop command in accordance with Figure 2.49.2-1 Execution example of clstop command.
If a message is displayed, take measures with reference to Maintenance Tool "2.49.3 Command termination messages and action to be taken" (MNTT 02-2740).
After completing the measures, retry the operation from (1).

```
$ sudo clstop
```

Figure 2.49.2-1 Execution Example of the clstop Command

NOTE: Execute by attaching "-f" option only when there is an instruction to stop the cluster forcibly.

(4) When step (3) is executed, a confirmation message (KAQM06133-Q) is displayed at the time to execute the command. Enter "y" to start execution. Stopping process of a cluster is executed.
To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.49.3 Command termination messages and action to be taken" (MNTT 02-2740).
Repeat the procedure from the step (2) after completing the action.

```
$ sudo clstop
KAQM06133-Q Performing this operation will stop the services on both nodes. Are
you sure you want to stop the cluster? (y/n) y
```

Figure 2.49.2-2 Confirmation Message (KAQM06133-Q) for the clstop Command Execution

(5) After executing clstatus command, check that "Cluster status" becomes "INACTIVE," and "Node status" of both node becomes "INACTIVE". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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2.49.3 Command termination messages and action to be taken

When you execute the clstop command, messages might be displayed. Table 2.49.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.49.3-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of "KAQG7xxxx" is shown in the both nodes. When the SIM of "KAQG7xxxx" is displayed, take measures in accordance with the message. When the SIM of "KAQG7xxxx" is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06050-E	The cluster is not operating.	The cluster is not in the state of operation.	Execute clstatus command, and check that the cluster status is "ACTIVE", and then retry the operation. For clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).
4	KAQM06133-Q	Performing this operation will stop the services on both nodes. Are you sure you want to stop the cluster? (y/n)	Performing this operation will stop the services on both nodes. Are you sure you want to stop the cluster?	If you want to stop the OS, enter "y". If you want to cancel the processing, enter "n".

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Table 2.49.3-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
5	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
7	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
8	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
9	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
11	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
12	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
13	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.50 Node Start Up (ndstart)

This command starts a node.

NOTE:
- This is not supported in the single node configuration.
- This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.50.1 Command line

This command uses the following command lines.

- To start the node:
  ndstart [--] *<node name>*

- To display the command format on the standard output:
  ndstart -h

Table 2.50.1-1 shows the description of each option.

Table 2.50.1-1 Command Options

No.	Option	Description	Remarks
1	--	Specifies this option when there is a node name attaching "-" on the head of the name.	It must be designated if a node name ("-h" or "-c") exists.
2	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.50.2 Execution procedure

This subsection describes the procedure for executing the ndstart command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute starting the node. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the other side node of which starting the node via ssh from the maintenance PC. If node0 is to be started, log in to the node1. For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the peerstatus command, and confirm the node status of the other side.

- If [BOOT COMPLETE] is shown, proceed to the step (3).
- If [UNKNOWN] is shown, log off from the node. And log in to the node of which starting the node. Then proceed to the step (3).
- If [BOOT COMPLETE] or [UNKNOWN] is not shown, wait 15 minutes. And execute peerstatus command again. When [BOOT COMPLETE] is shown in second execution result, proceed to step (3). When [BOOT COMPLETE] is not shown in second execution result, collect the OS log of the starting the node and send it to the Support Center. If disable to log in to the node via ssh, collect log files in maintenance mode.

For details about how to check the other side node status, refer to Maintenance Tool "2.36 Displaying the Status of Other Side Node (peerstatus)" (MNTT 02-2130).
For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

(3) Execute clstatus command, and check that "Node status" is "INACTIVE". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(4) Write down the node name that is in the state of "INACTIVE" in the step (3).

(5) Specify the node name noted down in the step (4), and execute ndstart command in accordance with the execution example as shown in Figure 2.50.2-1.
If a message is displayed, take measures with reference to Maintenance Tool "2.50.3 Command termination messages and action to be taken" (MNTT 02-2780).
After completing the measures, retry the operation from (1).

```
$ sudo ndstart <node name>
```

Figure 2.50.2-1 Execution Example of the ndstart Command

(6) Execute clstatus command on the side of the login node and check that the "Node status" is "UP". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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2.50.3 Command termination messages and action to be taken

When you execute the ndstart command, messages might be displayed. Table 2.50.3-1 lists the action to be taken for each message ID.

Table 2.50.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of "KAQG7xxxx" is shown in the both nodes. When the SIM of "KAQG7xxxx" is displayed, take measures in accordance with the message. When the SIM of "KAQG7xxxx" is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06055-E	The specified node does not exist.(node name = <*node-name*>)	The specified node name does not exist.	Check the specified node name, and then retry the operation.
4	KAQM06057-E	The specified node is not stopped.	The specified node status is not in the state of "INACTIVE".	Execute clstatus command, and check that the cluster status is "INACTIVE", and then retry the operation. For clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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Table 2.50.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
5	KAQM06069-E	The specified <*item-name*> cannot be used because it includes an invalid character. (entered value = <*entered-value*>)	A character unusable for the name is used.	Check the specified resource group name. Check that a character other than the following is not used: alphanumeric characters, slash (/), period (.), comma (,), hyphen (-), underscore (_), colon (:), equality sign (=), and at sign (@).
6	KAQM06070-E	The specified <*item-name*> cannot be used because it exceeds 22 characters. (entered value = <*entered-value*>)	The number of characters that exceeds the maximum number was specified.	Check that the number of characters used for the specified resource group name does not exceed 22.
7	KAQM06071-E	The specified <*item-name*> cannot be used because it is a reserved word. (entered value = <*entered-value*>)	A system-reserved word was specified.	Check the specified node name.
8	KAQM06072-E	The name "0" cannot be specified for the <*item-name*>	An unusable name, "0" was specified.	
9	KAQM06073-E	The specified <item-name> cannot be used because it begins with an underscore (_). (entered value = <*entered-value*>)	A name beginning with the underscore (_) was specified for the resource group name	
10	KAQM06144-E	An attempt to update resource information failed.	Updating resource information fails.	Execute failover or failback. When an error occurs again, a new installation is needed to restore. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
11	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
12	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.50.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
13	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
14	KAQM14132-E	No license is set to allow use of basic functionality.	The license to use basic function is not set (The message is different in the case the OS version is 3.0.1-XX or earlier.)	Set the license. Either request the system administrator to do it or execute the setting by the command. For the method of setting the license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
15	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
16	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
17	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
18	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
19	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
20	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.51 Node Termination (ndstop)

This command stops a node.

NOTE:
- Report of this command execution to the system administrator and execute it after the system administrator notifies to the end user.
- This is not supported in the single node configuration.
- This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.51.1 Command line

This command uses the following command lines.

- To stop the node:
  ndstop [-f] [-y] [--] <*node name*>

- To display the command format on the standard output:
  ndstop -h

Table 2.51.1-1 shows the description of each option.

Table 2.51.1-1 Command Options

No.	Option	Description	Remarks
1	--	Specifies this option when there is node name attaching "-" on the head of the name.	It must be designated if a resource group name ("-h" or "-c") exists.
2	-f	Specifies when the forced stop of a node is executed. When this option is specified, the operation is executed regardless of the cluster status. However, if the cluster status is "INACTIVE", it ends with an error.	For the details of cluster status, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). Do not add this option unless otherwise instructed to do so.
3	-y	Inhibits the output of confirmation messages.	Do not add this option unless otherwise instructed to do so.
4	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.51.2 Execution procedure

This subsection describes the procedure for executing the ndstop command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute stopping the node. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the node of which stopping the node via ssh from the maintenance PC. If node0 is executed stopping, log in to the node0. For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute clstatus command, and check that "Node status" is "UP". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(3) Write down the "node name" that is in the state of "UP" in the step (2).

(4) Specify the node name noted down in the step (3), and execute ndstop command in accordance with the execution example as shown in Figure 2.51.2-1.
If a message is displayed, take measures with reference to Maintenance Tool "2.51.3 Command termination messages and action to be taken" (MNTT 02-2840).
After completing the measures, retry the operation from (1).

```
$ sudo ndstop <node name>
```

Figure 2.51.2-1 Execution Example of the ndstop Command

NOTE: Execute by attaching "-f" option only when there is an instruction to stop the cluster forcibly.

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(5) When step (4) is executed, a confirmation message (KAQM06134-Q) is displayed at the time to execute the command. Enter "y" to start execution. Stopping process of a node is executed.
To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.51.3 Command termination messages and action to be taken" (MNTT 02-2840).
Repeat the procedure from the step (2) after completing the action.

```
$ sudo ndstop
KAQM06134-Q Performing this operation might stop the services on node. Are you
sure you want to stop the node? (y/n) y
```

Figure 2.51.2-2 Confirmation Message (KAQM06134-Q) for the clstop Command Execution

(6) Execute clstatus command on the side of the login node and check that the "Node status" becomes "INACTIVE". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

NOTE: When logging in to the stopped node ("Node status" is "INACTIVE"), the "Node status" of the other side node is displayed as "Unknown". To check the status of the both nodes, check it after logging in to the other side node.

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2.51.3 Command termination messages and action to be taken

When you execute the ndstop command, messages might be displayed. Table 2.51.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.51.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of "KAQG7xxxx" is shown in the both nodes. When the SIM of "KAQG7xxxx" is displayed, take measures in accordance with the message. When the SIM of "KAQG7xxxx" is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06055-E	The specified node does not exist.(node name = <*node-name*>)	The specified node name does not exist.	Check the specified node name, and then retry the operation.
4	KAQM06056-E	The specified node is not operating.	The specified node status is not in the state of "UP".	Execute clstatus command, and check that the cluster status is "UP", and then retry the operation. For clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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Table 2.51.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
5	KAQM06069-E	The specified <*item-name*> cannot be used because it includes an invalid character. (entered value = <*entered-value*>)	A character unusable for the name is used.	Check the specified resource group name. Check that a character other than the following is not used: alphanumeric characters, slash (/), period (.), comma (,), hyphen (-), underscore (_), colon (:), equality sign (=), and at sign (@).
6	KAQM06070-E	The specified <*item-name*> cannot be used because it exceeds 22 characters. (entered value = <*entered-value*>)	The number of characters that exceeds the maximum number was specified.	Check that the number of characters used for the specified resource group name does not exceed 22.
7	KAQM06071-E	The specified <*item-name*> cannot be used because it is a reserved word. (entered value = <*entered-value*>)	A system-reserved word was specified.	Check the specified node name.
8	KAQM06072-E	The name “0” cannot be specified for the <*item-name*>.	An unusable name, “0” was specified.	
9	KAQM06073-E	The specified <*item-name*> cannot be used because it begins with an underscore (_). (entered value = <*entered-value*>)	A name beginning with the underscore (_) was specified for the resource group name	
10	KAQM06134-Q	Performing this operation might stop the services on node. Are you sure you want to stop the node? (y/n)	Performing this operation might stop the services on node. Are you sure you want to stop the node?	If you want to stop the OS, enter “y”. If you want to cancel the processing, enter “n”.
11	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
12	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in “C.2.2 Determination Procedure when a Failure Occurred”. This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in “C.2.2 Determination Procedure when a Failure Occurred”.

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Table 2.51.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
13	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
14	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message “Management IP address is not set” is not output.
15	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
16	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
17	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
18	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
19	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.52 Resource group Starts Up (rgstart)

This command starts a resource group.

NOTE: This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.52.1 Command line

This command uses the following command lines.

- To start the resource group (in the cluster configuration):
  rgstart [--] <*node name*>
- To start the resource group (in the single node configuration):
  rgstart [-q]
- To display the command format on the standard output:
  rgstart -h

Table 2.52.1-1 shows the description of each option.

Table 2.52.1-1 Command Options

No.	Option	Description	Remarks
1	--	Specifies this option when there is node name attaching "-" on the head of the name.	It must be designated if a resource group name ("-h" or "-c") exists.
2	-q	Inhibits the output of progressing at the time of starting resource group.	Do not add this option unless otherwise instructed to do so.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.52.2 Execution procedure

This subsection describes the procedure for executing the rgstart command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute starting the resource group. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the node of which about to starting the resource group via ssh from the maintenance PC. If the resource group is about to start on the node0, log in to the node0. For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) In the cluster configuration, execute clstatus command, and check that “Node status” of the node that is about to start the resource group is “UP”. For the method of this confirmation, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).
If it is not in the state of “UP”, change the “Node status” to “UP” with reference to Maintenance Tool “2.50 Node Start Up (ndstart)” (MNTT 02-2760), and proceed to the next step.
In the single node configuration, proceed to step (5).

(3) Execute clstatus command and check that “Resource group status” of a node to be instructed the startup is “Offline/No error” or “Online Ready/No error clstatus”. For the method of this confirmation, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).

(4) Write down the “resource group name” to be started (“Resource group name”) .

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(5) In the cluster configuration, specify the resource group name noted down in the step (4), and execute rgstart command in accordance with the execution example as shown in Figure 2.52.2-1.
In the single node configuration, execute rgstart command in accordance with the execution example as shown in Figure 2.52.2-2. The progress of the resource group is displayed.
If a message is displayed, take measures with reference to Maintenance Tool "2.52.3 Command termination messages and action to be taken" (MNTT 02-2900).
After completing the measures, retry the operation from (1).

```
$sudo rgstart <Resource group name>
```

Figure 2.52.2-1 Execution Example of the rgstart Command (In the cluster configuration)

```
$sudo rgstart
Starting resource … (LVM_volume)
Starting resource … (Filesystem)
Starting resource … (NFS)
• • •
```

Figure 2.52.2-2 Execution Example of the rgstart Command (in the single node configuration)

(6) In the cluster configuration, execute clstatus command and check that the "Resource group status" of the specified resource group name becomes "Online/No error". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).
In the single node configuration, execute rgstatus command and check that the "Resource group status" becomes "Online/No error". For the method of this confirmation, refer to Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380).

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2.52.3 Command termination messages and action to be taken

When you execute the rgstart command, messages might be displayed. Table 2.52.3-1 lists the action to be taken for each message ID.

Table 2.52.3-1 Message IDs and Actions to be Taken (1/5)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of "KAQG7xxxx" is shown in the both nodes. When the SIM of "KAQG7xxxx" is displayed, take measures in accordance with the message. When the SIM of "KAQG7xxxx" is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06053-E	Processing for the cluster or resource group is currently executing.	Processing for the cluster or resource group is currently executing.	Execute clstatus command, and check the status of cluster, node, and resource group, and retry the operation when they are available to operate. For clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). If the problem occurs again, collect the OS Log. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.52.3-1 Message IDs and Actions to be Taken (2/5)

No.	Message ID	Message	Description	Action
4	KAQM06058-E	A virtual (service) IP address is not set for the specified resource group.	A virtual IP address is not set for the specified resource group. (A message displays in the window is different in the OS version 3.1.1-XX or earlier.)	Request the system administrator to set more than one virtual IP address for the resource group.
5	KAQM06059-E	The specified resource group does not exist. (resource group name = <*resource-group-name*>)	The specified resource group does not exist.	Check the specified resource group, and then retry the operation.
6	KAQM06061-E	The specified resource group is not stopped.	The specified resource group is not in the state of stopping.	Execute clstatus command, and check the status of cluster, node, and resource group, and retry the operation when they are available to operate. For clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). If the problem occurs again, collect the OS Log. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM06062-E	An attempt to start the resource group failed because the NFS service is not running.	An attempt to start the resource group failed because the NFS service is not running.	Stop forcibly the resource group that attempted to start. For the method of stopping the resource group, refer to Maintenance Tool "2.53 Stopping Resource group (rgstop)" (MNTT 02-2950). After that, request the system administrator to remove the cause of this problem.
8	KAQM06069-E	The specified <*item-name*> cannot be used because it includes an invalid character. (entered value = <*entered-value*>)	A character unusable for the name is used.	Check the specified resource group name. Check that a character other than the following is not used: alphanumeric characters, slash (/), period (.), comma (,), hyphen (-), underscore (_), colon (:), equality sign (=), and at sign (@).
9	KAQM06070-E	The specified <*item-name*> cannot be used because it exceeds 22 characters. (entered value = <*entered-value*>)	The number of characters that exceeds the maximum number was specified.	Check that the number of characters used for the specified resource group name does not exceed 22.

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Table 2.52.3-1 Message IDs and Actions to be Taken (3/5)

No.	Message ID	Message	Description	Action
10	KAQM06071-E	The specified <*item-name*> cannot be used because it is a reserved word. (entered value = <*entered-value*>)	A system-reserved word was specified.	Check the specified resource group name.
11	KAQM06072-E	The name “0” cannot be specified for the <*item-name*>.	An unusable name, “0” was specified.	
12	KAQM06073-E	The specified <*item-name*> cannot be used because it begins with an underscore (_). (entered value = <*entered-value*>)	A name beginning with the underscore (_) was specified for the resource group name	
13	KAQM06121-E	The resource group is not stopped.	The status of the resource group is not “Offline/No error”.	Check the status of the resource group. Stop the resource group and retry the operation. For the resource group termination, refer to Maintenance Tool “2.53 Stopping Resource group (rgstop)” (MNTT 02-2950).
14	KAQM06122-E	An attempt to start the resource group has failed.	An attempt to start the resource group failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
15	KAQM06124-E	An internal error occurred. Processing might be temporarily disabled.	An attempt to execute the command failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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Table 2.52.3-1 Message IDs and Actions to be Taken (4/5)

No.	Message ID	Message	Description	Action
16	KAQM06125-E	An attempt to start the resource group has failed.	An attempt to start the resource group failed.	Check if the SIM of "KAQM35xxx" is displayed. When the SIM of "KAQM35xxx" is displayed, take measures in accordance with the message. When the SIM of "KAQM35xxx" is not displayed, collect the OS Log and send it to the Support Center. For the method of collecting OS Log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
17	KAQM06127-E	The starting of the resource group timed out.	A time-out error occurs on the starting resource group.	Stop forcibly the resource group, and then retry the operation. For the method of stopping the resource group forcibly, refer to Maintenance Tool "2.53 Stopping Resource group (rgstop)" (MNTT 02-2950). If this error occurs again, collect the OS Log and send it to the Support Center. For the method of collecting OS Log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
18	KAQM06131-E	An attempt to start the resource group failed because the NFS service is not running.	An attempt to start the resource group failed because the NFS service is not running.	Request the system administrator to start the NFS service after stopping the resource group forcibly. If this error occurs again, collect the OS Log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
19	KAQM06132-E	The management port has not been set.	A command is started before setting the management port.	Execute after the management port is set.
20	KAQM06144-E	An attempt to update resource information failed.	Updating resource information fails.	Execute failover or failback. When an error occurs again, a new installation is needed to restore. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
21	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.52.3-1 Message IDs and Actions to be Taken (5/5)

No.	Message ID	Message	Description	Action
22	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
23	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
24	KAQM14132-E	No license is set to allow use of basic functionality.	The license to use basic function is not set (The message is different in the case the OS version is 3.0.1-XX or earlier.)	Set the license. Either request the system administrator to do it or execute the setting by the command. For the method of setting the license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
25	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
26	KAQM14134-E	An error occurred in the shared processing of commands. (Error=*<error>*)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
27	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—
28	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
29	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.53 Stopping Resource group (rgstop)

This command stops a service such as NFS share or CIFS share that is provided by the resource group.

NOTE:
- Because this command execution stops the service, report it to the system administrator and execute this operation after the system administrator notifies to the end user.
- This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.53.1 Command line

This command uses the following command lines.

- To stop the resource group (In the cluster configuration):
  rgstop [-f] [-y] [--] <*resource group name*>

- To stop the resource group (In the single node configuration):
  rgstop [-f] [-y] [-q]

- To display the command format on the standard output:
  rgstop -h

Table 2.53.1-1 shows the description of each option.

Table 2.53.1-1 Command Options

No.	Option	Description	Remarks
1	--	Specifies this option when there is a resource group name attaching "-" on the head of the name.	It must be designated if a resource group name ("-h" or "-c") exists.
2	-f	Specifies when the forced stop of a resource group is executed. When this option is specified, the operation is executed regardless of the resource group status.	Do not add this option unless otherwise instructed to do so.
3	-y	Inhibits the output of confirmation messages.	Do not add this option unless otherwise instructed to do so.
4	-q	Inhibits the output of progressing at the time of stopping resource group.	Do not add this option unless otherwise instructed to do so.
5	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.53.2 Execution procedure

This subsection describes the procedure for executing the rgstop command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute stopping the resource group. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) In the cluster configuration, execute clstatus command, and check that "Node status" is "UP". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).
If it is not in the state of "UP", log in to the other side node, and proceed from the step (2).
In the single node configuration, proceed to step (5).

(3) Execute clstatus command and check that "Resource group status" to be instructed the stopping is "Online/No error", "Online Ready/No error", or "Online Maintenance/No error". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(4) Write down the "resource group name" to be stopped.

(5) In the cluster configuration, specify the resource group name noted down in the step (4), and execute rgstop command in accordance with the execution example as shown in Figure 2.53.2-1.
In the single node configuration, execute rgstop command in accordance with the execution example as shown in Figure 2.53.2-2.
If a message is displayed, take measures with reference to Maintenance Tool "2.53.3 Command termination messages and action to be taken" (MNTT 02-2980).
After completing the measures, retry the operation from (1).

```
$ sudo rgstop <Resource group name>
```

Figure 2.53.2-1 Execution Example of the rgstop Command (In the cluster configuration)

```
$ sudo rgstop
```

Figure 2.53.2-2 Execution Example of the rgstop Command (In the single node configuration)

NOTE: Execute by attaching "-f" option only when there is an instruction to stop the resource group forcibly.

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(6) When step (5) is executed, a confirmation message (KAQM06135-Q) is displayed at the time to execute the command in the both cluster configuration and the single node configuration. Enter “y” to start execution. Stopping process of a resource group is executed. In the single node configuration, the progress of resource group stopping is displayed as shown in Figure 2.53.2-4.
To cancel the execution, enter “n”.
When a message ID is displayed, refer to Maintenance Tool “2.53.3 Command termination messages and action to be taken” (MNTT 02-2980).
Repeat the procedure from the step (2) after completing the action.

```
$ sudo rgstop node1
KAQM06135-Q Performing this operation will stop the services. Are you sure you
want to stop the resource group? (y/n) y
```

Figure 2.53.2-3 Confirmation Message (KAQM06135-Q) for the rgstop command execution [In the cluster configuration]

```
$ sudo rgstop node1
KAQM06135-Q Performing this operation will stop the services. Are you sure you
want to stop the resource group? (y/n) y
Stopping resource … (Cifs)
Stopping resource … (Data_management)
Stopping resource … (IP_address)
・・・・・
```

Figure 2.53.2-4 Confirmation Message (KAQM06135-Q) for the rgstop command execution [In the single node configuration]

(7) In the cluster configuration, execute clstatus command and check that the “Resource group status” becomes “Offline/No error”. For the method of this confirmation, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).
In the single node configuration, execute rgstatus command and check that the “Resource group status” becomes “Offline/No error”. For the method of this confirmation, refer to Maintenance Tool “2.63 Resource group Status Display (rgstatus)” (MNTT 02-3380).

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2.53.3 Command termination messages and action to be taken

When you execute the rgstop command, messages might be displayed. Table 2.53.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.53.3-1 Message IDs and Actions to be Taken (1/5)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of "KAQG7xxxx" is shown in the both nodes. When the SIM of "KAQG7xxxx" is displayed, take measures in accordance with the message. When the SIM of "KAQG7xxxx" is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06053-E	Processing for the cluster or resource group is currently executing.	Processing for the cluster or resource group is currently executing.	Execute clstatus command, and check the status of cluster, node, and resource group, and retry the operation when they are available to operate. For clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). If the problem occurs again, collect the OS Log. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM06059-E	The specified resource group does not exist. (resource group name = <*resource-group-name*>)	The specified resource group does not exist.	Check the specified resource group, and then retry the operation.

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Table 2.53.3-1 Message IDs and Actions to be Taken (2/4)

No.	Message ID	Message	Description	Action
5	KAQM06060-E	The specified resource group is not operating.	The specified resource group is not in the state of running.	The resource group is not in the state of “Online/No error”, “Online Ready/No error”, or “Online Maintenance/No error”. Execute clstatus command, and check that the status of cluster, node, and resource group is normal, and then retry the operation. For clstatus command, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).
6	KAQM06069-E	The specified <*item-name*> cannot be used because it includes an invalid character. (entered value = <*entered-value*>)	A character unusable for the name is used.	Check the specified resource group name. Check that a character other than the following is not used: alphanumeric characters, slash (/), period (.), comma (,), hyphen (-), underscore (_), colon (:), equality sign (=), and at sign (@).
7	KAQM06070-E	The specified <*item-name*> cannot be used because it exceeds 22 characters. (entered value = <*entered-value*>)	The number of characters that exceeds the maximum number was specified.	Check that the number of characters used for the specified resource group name does not exceed 22.
8	KAQM06071-E	The specified <*item-name*> cannot be used because it is a reserved word. (entered value = <*entered-value*>)	A system-reserved word was specified.	Check the specified resource group name.
9	KAQM06072-E	The name “0” cannot be specified for the <*item-name*>.	An unusable name, “0” was specified.	
10	KAQM06073-E	The specified <*item-name*> cannot be used because it begins with an underscore (_). (entered value = <*entered-value*>)	A name beginning with the underscore (_) was specified for the resource group name	
11	KAQM06120-E	The resource group is not running.	The status of the resource group is not “Online/No error”.	Check that the resource group is in normal status, and then retry the operation. For the method to confirm the resource group, refer to Maintenance Tool “2.63 Resource group Status Display (rgstatus)” (MNTT 02-3380).

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Table 2.53.3-1 Message IDs and Actions to be Taken (3/4)

No.	Message ID	Message	Description	Action
12	KAQM06123-E	An attempt to stop the resource group has failed.	An attempt to stop the resource group failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
13	KAQM06124-E	An internal error occurred. Processing might be temporarily disabled.	An attempt to execute the command failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM06126-E	An attempt to stop the resource group has failed.	An attempt to stop the resource group failed.	Check if the SIM of "KAQM35xxx" is displayed. When the SIM of "KAQM35xxx" is displayed, take measures in accordance with the message. When the SIM of "KAQM35xxx" is not displayed, collect the OS Log and send it to the Support Center. For the method of collecting OS Log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
15	KAQM06128-E	The stopping of the resource group timed out.	A time-out error occurs on the resource group stopping.	Stop forcibly the resource group by attaching the "-f" option.
16	KAQM06132-E	The management port has not been set.	A command is started before setting the management port.	Execute after the management port is set.
17	KAQM06135-Q	Performing this operation will stop the services. Are you sure you want to stop the resource group? (y/n)	If this operation is performed, the services will stop. Do you want to stop the resource group?	If you want to stop the OS, enter "y". If you want to cancel the processing, enter "n".
18	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.53.3-1 Message IDs and Actions to be Taken (4/4)

No.	Message ID	Message	Description	Action
19	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
20	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
21	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
22	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
23	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
24	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
25	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.54 Changing Resource group Execution node (rgmove)

This command executes changing the execution node of the resource group.

NOTE:
- Because this command execution stops the service temporarily, report it to the system administrator and execute this operation after the system administrator notifies to the end user.
- This is not supported in the single node configuration.

2.54.1 Command line

This command uses the following command lines.

- To change the execution node of the resource group:
  rgmove [--] [-y] *<resource group name>*

- To display the command format on the standard output:
  rgmove -h

Table 2.54.1-1 shows the description of each option.

Table 2.54.1-1 Command Options

No.	Option	Description	Remarks
1	--	Specifies this option when there is a resource group name attaching "-" on the head of the name.	It must be designated if a resource group name ("-h" or "-c") exists.
2	-y	Inhibits the output of confirmation messages. This command can be executed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	Do not add this option unless otherwise instructed to do so.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the execution time.

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2.54.2 Execution procedure

This subsection describes the procedure for executing the rgmove command.

NOTE: When the system administrator is absent, get the permission from the system administrator to execute starting the node. Execute in accordance with the following procedures after the system administrator notifies it to the end user.

(1) Log in to the node of which the target or the source of performing failover via ssh from the maintenance PC. For details about how to log in to a node, Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute clstatus command, and check that the "Node status" of the node to be migrated is "UP", and the "Resource group status" of the resource group to be migrated is "Online/No error" or "Online Maintenance/No error". For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

(3) Write down the "resource group name" to be migrated.

(4) Specify the resource group name noted down in the step (3), and execute rgmove command in accordance with the execution example as shown in Figure 2.54.2-1.
If a message ID is displayed, take measures with reference to Maintenance Tool "2.54.3 Command termination messages and action to be taken" (MNTT 02-3040).
After completing the measures, retry the operation from (2).

```
$ sudo rgmove <Resource group name>
```

Figure 2.54.2-1 Execution Example of the rgmove Command

(5) When the OS version is 2.2.1-XX or later, when step (4) is executed, a confirmation message (KAQM06136-Q) is displayed at the time of execute the command. Enter "y" to start execution. Migrating of the node of the resource group is executed.
To cancel the execution, enter "n".
Note that, when the OS version is 2.1.1-XX, no confirmation message is displayed when the rgmove is executed and the change of the resource group execution node is performed.
For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID is displayed, refer to Maintenance Tool "2.54.3 Command termination messages and action to be taken" (MNTT 02-3040).
Repeat the procedure from the step (2) after completing the action.

```
$ sudo rgmove node1
KAQM06136-Q Performing this operation will temporarily stop the services. Are you
sure you want to change the execution node of the resource group? (y/n) y
```

Figure 2.54.2-2 Confirmation Message (KAQM06136-Q) for the rgmove Command Execution

(6) Execute clstatus command and check that the execution node of the resource group is changed. For the method of this confirmation, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

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2.54.3 Command termination messages and action to be taken

When you execute the rgmove command, messages might be displayed. Table 2.54.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.54.3-1 Message IDs and Actions to be Taken (1/4)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06018-E	The processing of the failover function has failed.	The processing of the failover function has failed.	Check if the SIM of "KAQG7xxxx" is shown in the both nodes. When the SIM of "KAQG7xxxx" is displayed, take measures in accordance with the message. When the SIM of "KAQG7xxxx" is not displayed, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06053-E	Processing for the cluster or resource group is currently executing.	Processing for the cluster or resource group is currently executing.	Execute the clstatus command and check the statuses of the cluster, node, and resource group. Then after the executable statuses are achieved, execute the rgmove command again. For the clstatus command, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040). If the error occurs again, collect the OS log and send it to the Technical Support Center. For procedures of collecting the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM06059-E	The specified resource group does not exist. (resource group name = <*resource-group-name*>)	A non-existent resource group was specified.	Check the specified resource group name, and then execute the rgmove command again.

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Table 2.54.3-1 Message IDs and Actions to be Taken (2/4)

No.	Message ID	Message	Description	Action
5	KAQM06060-E	The specified resource group is not operating.	The specified resource group is not operating.	The status of the resource group is not “Online/No error”, “Online Ready/No error”, or “Online Maintenance/No error”. Execute the clstatus command and check that the statuses of the cluster, node, and resource group are appropriate. Then execute the rgmove command again. For the clstatus command, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040).
6	KAQM06065-E	Processing for the cluster or resource group might be currently executing, or a failover might be occurring.	Processing for the cluster or resource group might be currently executing, or a failover might be occurring.	Execute the clstatus command and check the statuses of the cluster, node, and resource group. Then after the executable statuses are achieved, execute the rgmove command again. For the clstatus command, refer to Maintenance Tool “2.2 Displaying the Cluster Status (clstatus)” (MNTT 02-0040). If the error occurs again, collect the OS log and send it to the Technical Support Center. For procedures of collecting the OS log, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
7	KAQM06066-E	The node operating the resource group is not running.	The Node status of the node in which the resource group is operated is not “UP”.	Set the “Node Status” of the node where the resource group is running to “UP”. For more details, refer to Maintenance Tool “2.50 Node Start Up (ndstart)” (MNTT 02-2760).
8	KAQM06067-E	The node that is the move destination of the resource group is not running.	The Node status of the node to which the resource group is transferred is not “UP”.	Set the “Node Status” of the target node of the resource group to “UP”. For more details, refer to Maintenance Tool “2.50 Node Start Up (ndstart)” (MNTT 02-2760).
9	KAQM06068-E	An attempt to start the resource group failed because the NFS service of the node that is the move destination of the resource group is not running.	An attempt to start the resource group failed because the NFS service of the node that is the destination of the resource group is not running.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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Table 2.54.3-1 Message IDs and Actions to be Taken (3/4)

No.	Message ID	Message	Description	Action
10	KAQM06069-E	The specified <*item-name*> cannot be used because it includes an invalid character. (entered value = <*entered-value*>)	A character unusable for the name is used.	Check the specified resource group name. Check that a character other than the following is not used: alphanumeric characters, slash (/), period (.), comma (,), hyphen (-), underscore (_), colon (:), equality sign (=), and at sign (@).
11	KAQM06070-E	The specified <*item-name*> cannot be used because it exceeds 22 characters. (entered value = <*entered-value*>)	The number of characters that exceeds the maximum number was specified.	Check that the number of characters used for the specified resource group name does not exceed 22.
12	KAQM06071-E	The specified <*item-name*> cannot be used because it is a reserved word. (entered value = <*entered-value*>)	A system-reserved word was specified.	Check the specified resource group name.
13	KAQM06072-E	The name “0” cannot be specified for the <item-name>.	An unusable name, “0” was specified.	
14	KAQM06073-E	The specified <*item-name*> cannot be used because it begins with an underscore (_). (entered value = <*entered-value*>)	A name beginning with the underscore (_) was specified for the resource group name	
15	KAQM06136-Q	Performing this operation will temporarily stop the services. Are you sure you want to change the execution node of the resource group? (y/n)	Performing this operation will temporarily stop the services. Are you sure you want to change the execution node of the resource group?	If you want to change the execution node, enter “y”. If you want to cancel the processing, enter “n”.
16	KAQM06144-E	An attempt to update resource information failed.	Updating resource information fails.	Execute failover or failback. When an error occurs again, a new installation is needed to restore. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
17	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in “C.2.2 Determination Procedure when a Failure Occurred”. This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in “C.2.2 Determination Procedure when a Failure Occurred”.

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Table 2.54.3-1 Message IDs and Actions to be Taken (4/4)

No.	Message ID	Message	Description	Action
18	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
19	KAQM14132-E	No license is set to allow use of basic functionality.	The license to use basic function is not set (The message is different in the case the OS version is 3.0.1-XX or earlier.)	Set the license. Either request the system administrator to do it or execute the setting by the command. For the method of setting the license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
20	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
21	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
22	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
23	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
24	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
25	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.55 Embedded RAID Controller Internal Log Acquisition (log.sh)

This command writes the internal log of the embedded RAID controller into a file.

NOTE: This command cannot be executed on the maintenance mode.

2.55.1 Command line

This command uses the following command line.

- To collect internal logs of the RAID controller:
  log.sh

2.55.2 Output format

The output format for the log.sh command execution is shown in Figure 2.55.2-1 Output Format of the log.sh Command.

```
Output format of log.sh

[Execution result]

Exit Code:[Exit Code]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.55.2-1 Output Format of the log.sh Command

Table 2.55.2-1 describes the details about the items in Figure 2.55.2-1 Output Format of the log.sh Command.

Table 2.55.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[Execution result]	Displays the failure or success of the command execution result.
2	[Exit Code]	Displays the return value of a command.

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2.55.3 Execution procedure

This subsection describes the procedure for executing the log.sh command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.55.3-1 shows an example when log.sh command is executed.
When Exit Code is other than 0x00, refer to Maintenance Tool "2.55.4 Command termination messages and action to be taken" (MNTT 02-3100).

```
$ sudo log.sh

Success in AdpEventLog

Exit Code: 0x00
```

Figure 2.55.3-1 Execution Example of the log.sh Command

(3) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.55.3-2 to download the log file that is created at the step (2). Specifying only file name is available because the files are stored under the home directory for the maintenance personnel (/home/service). For more details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230). An example of using pscp is described here.

```
C:\>pscp -scp -unsafe service@10.0.0.50:*.log C:\work
```

Figure 2.55.3-2 Log file downloading for the maintenance PC

The log files to be collected are the following.

- AdapterInfo.log
- LDPDInfo.log
- UART.log
- Event.log
- CmdTool.log
- MegaSAS.log

(4) Delete the log files that downloaded in the step (3) as shown in Figure 2.55.3-3. For more details about file deletion, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$ sudo rmfile AdapterInfo.log
$ sudo rmfile LDPDInfo.log
$ sudo rmfile UART.log
$ sudo rmfile Event.log
$ sudo rmfile CmdTool.log
$ sudo rmfile MegaSAS.log
```

Figure 2.55.3-3 Deletion of files that downloaded

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2.55.4 Command termination messages and action to be taken

When you execute the log.sh command, messages might be displayed. Table 2.55.4-1 lists the action to be taken for each message ID.

Table 2.55.4-1 Message IDs and Actions to be Taken

No.	Exit Code	Description	Action
1	0x00	The operation is terminated normally.	—
2	other than 0x00	The operation is terminated abnormally.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.56 Status Information Acquisition of the Virtual Disk and the Physical Disk (state.sh)

This command acquires the status information of the virtual disk and the physical disk.

2.56.1 Command line

This command uses the following command line.

- To get the status information of the virtual disk and the physical disk:
  state.sh

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2.56.2 Execution procedure

This subsection describes the procedure for executing the state.sh command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.56.2-1 shows an example of when state.sh command is executed.
When the message is displayed, refer to Maintenance Tool "2.56.3 Command termination messages and action to be taken" (MNTT 02-3130).

```
$ sudo state.sh
```

Figure 2.56.2-1 Execution Example of the state.sh Command

(3) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.56.2-2 to download the log files (state.log, MegaSAS.log) created at the step (2). Specifying only file name is available because the files are stored under the home directory for the maintenance personnel (/home/service). For more details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230).
An example of using pscp is described here.

```
C:\>pscp -scp -unsafe service@10.0.0.50:*.log C:\work
```

Figure 2.56.2-2 Log file downloading for maintenance PC

(4) Delete the log files that downloaded in the step (3) as shown in Figure 2.56.2-3. For the details of deleting a file, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$ sudo rmfile state.log
$ sudo rmfile MegaSAS.log
```

Figure 2.56.2-3 Deletion of files that downloaded

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2.56.3 Command termination messages and action to be taken

When you execute the state.sh command, messages might be displayed. Table 2.56.3-1 lists the action to be taken for each message ID.

Table 2.56.3-1 Message IDs and Actions to be Taken

No.	Massage	Description	Action
1	None	The operation is terminated normally.	—
2	An error message is displayed.	The operation is terminated abnormally.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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2.57 Progress Confirmation of Consistency Checking of the Data in the Virtual Disk (ccchk.sh)

This command executes the progress confirmation of consistency checking of data in the virtual disk.

2.57.1 Command line

This command uses the following command line.

- To execute the progress confirmation of consistency checking of data in the virtual disk:
  ccchk.sh

2.57.2 Output format

The output format for the ccchk.sh command execution is shown in Figure 2.57.2-1 Output Format of the ccchk.sh Command.

```
Output format of ccchk.sh

[Progress Situation]

Exit Code:[Exit Code]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.57.2-1 Output Format of the ccchk.sh Command

Table 2.57.2-1 describes the details about the items in Figure 2.57.2-1 Output Format of the ccchk.sh Command.

Table 2.57.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[Progress Situation]	Displays the progress situation of the data consistency checking.
2	[Exit Code]	Displays the return value of a command.

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2.57.3 Execution procedure

This subsection describes the procedure for executing the ccchk.sh command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.57.3-1 shows an example when ccchk.sh is executed.
If the consistency checking of data is in progress, progress information output window is updated periodically (every one minute). If you press ESC or the consistency checking of data for all drives have completed (100%) during the ccchk.sh command is in progress, outputs the Exit code and return to the command prompt window.
When Exit Code is other than 0x00, refer to Maintenance Tool "2.57.4 Command termination messages and action to be taken" (MNTT 02-3160).

```
$ sudo ccchk.sh

 Progress of Virtual Drives...

 Virtual Drive #          Percent Complete          Time Elps
      0      ##                      04 %            00:07:20
      1      ######################## 49 %            00:07:20
      2      #######                 14 %            00:07:20

   Press <ESC> key to quit...

 : (Progress is updated until the ESC key is presses)

Exit Code: 0x00
```

Figure 2.57.3-1 Execution Example of the ccchk.sh Command 1

Figure 2.57.3-2 shows an example when the consistency checking of data is not in progress.

```
$ sudo ccchk.sh

Check Consistency on VD #0 is not in progress.
Check Consistency on VD #1 is not in progress.
Check Consistency on VD #2 is not in progress.

Exit Code: 0x00
$
```

Figure 2.57.3-2 Execution Example of the ccchk.sh Command 2

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2.57.4 Command termination messages and action to be taken

When you execute the ccchk.sh command, messages might be displayed. Table 2.57.4-1 lists the action to be taken for each message ID.

Table 2.57.4-1 Message IDs and Actions to be Taken

No.	Exit Code	Description	Action
1	0x00	The operation is terminated normally.	—
2	Other than 0x00	The operation is terminated abnormally.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.58 Confirmation of Rebuilding Progress of Physical Disk (rbldchk.sh)

This command executes the rebuilding progress of the physical disks after replacing the internal drive.

NOTE: If the OS version is 4.0.0-XX or earlier, this command does not support CR220SM.
To confirm the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS" (MNTT 02-2060).

2.58.1 Command line

This command uses the following command line.

- To confirm the rebuilding progress of the physical disk:
  rbldchk.sh

2.58.2 Output format

The output format for the rbldchk.sh command execution is shown in Figure 2.58.2-1 Output Format of the rbldchk.sh Command.

```
Output format of rbldchk.sh

[Progress Situation]

Exit Code:[Exit Code]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.58.2-1 Output Format of the rbldchk.sh Command

Table 2.58.2-1 describes the details about the items in Figure 2.58.2-1 Output Format of the rbldchk.sh Command.

Table 2.58.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[Progress Situation]	Displays the progress situation of the rebuilding of physical disk.
2	[Exit Code]	Displays the return value of a command.

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2.58.3 Execution procedure

This subsection describes the procedure for executing the rbldchk.sh command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.58.3-1 shows an example of executing rbldchk.sh command.
After executing the command, the progress of rebuilding is displayed. As shown in the figure below, confirm that the progress is counted up during rebuilding and that Exit Codes for the number of drives are displayed as 0x00 after the progress becomes 100%. If the OS version is 4.0.0-XX or earlier, eight Exit Codes are displayed.
Note that the Exit Code at the time of execution is displayed if you press [ESC] key in process of execution.
When Exit Code is other than 0x00, refer to Maintenance Tool "2.58.4 Command termination messages and action to be taken" (MNTT 02-3190).

```
$ sudo rbldchk.sh

    Rebuild progress of physical drives...

  Enclosure:Slot              Percent Complete          Time Elps
     252 :00    ########################99 %#######################* 06:25:37

   Press <ESC> key to quit...

==================================================================

    Rebuild progress of physical drives...

  Enclosure:Slot              Percent Complete          Time Elps
     252 :00    ########################100 %###################### 06:25:37

   Press <ESC> key to quit...

Exit Code: 0x00

Device(Encl-252 Slot-1) is not in rebuild process

Exit Code: 0x00

Device(Encl-252 Slot-2) is not in rebuild process

Exit Code: 0x00

Device(Encl-252 Slot-3) is not in rebuild process

Exit Code: 0x00

Exit Code: 0x00

Exit Code: 0x00

Exit Code: 0x00

Exit Code: 0x00
```

The progress display is counted up

If the progress displays 100%, Exit Codes are displayed for the number of drives as shown below. Confirm that all of them are 0x00.
However, if the OS version is 4.0.0-XX or earlier, the number of Exit Codes is eight. Confirm that all of them are 0x00.

Figure 2.58.3-1 Execution Example of the rbldchk.sh Command

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(3) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.58.3-2 to download the log file that is created at the step (2). Specifying a file name is only available because the files are stored under the home directory for the maintenance personnel (/home/service). For more details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230).
An example of using pscp is described here.

```
C:\>pscp -scp -unsafe service@10.0.0.50:MegaSAS.log C:\work
```

Figure 2.58.3-2 Log file downloading for the maintenance PC

(4) Delete the log file that downloaded in the step (3) as shown in Figure 2.58.3-3. For the details of deleting a file, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$ sudo rmfile MegaSAS.log
```

Figure 2.58.3-3 Deletion of file that downloaded

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2.58.4 Command termination messages and action to be taken

When you execute the rbldchk.sh command, messages might be displayed. Table 2.58.4-1 lists the action to be taken for each message ID.

Table 2.58.4-1 Message IDs and Actions to be Taken

No.	Exit Code	Description	Action
1	0x00	The operation is terminated normally.	—
2	Other than 0x00	The operation is terminated abnormally.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.59 Check the Version Information of Hardware Maintenance Agent (miacatget)

This command displays the version of the hardware maintenance agent that is currently installed.

2.59.1 Command line

This command uses the following command line.

- To confirm the version of the hardware maintenance agent:
  miacatget

2.59.2 Output format

The output format for the miacatget command execution is shown in Figure 2.59.2-1 Output Format of the miacatget Command.

```
Output format of miacatget

VERSION=[Version]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.59.2-1 Output Format of the miacatget Command

Table 2.59.2-1 describes the details about the items in Figure 2.59.2-1 Output Format of the miacatget Command.

Table 2.59.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[Version]	Displays the version of the hardware maintenance agent.

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2.59.3 Execution procedure

This subsection describes the procedure for executing the miacatget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.59.3-1 shows an example of executing miacatget command.
When no version is displayed or an error message is displayed, refer to Maintenance Tool "2.59.4 Command termination messages and action to be taken" (MNTT 02-3220).

```
$sudo miacatget
VERSION = "42-51"
```

Figure 2.59.3-1 Execution Example of the miacatget Command

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2.59.4 Command termination messages and action to be taken

When you execute the miacatget command, messages might be displayed. Table 2.59.4-1 lists the action to be taken for each message ID.

Table 2.59.4-1 Message IDs and Actions to be Taken

No.	Massage	Description	Action
1	None	The operation is terminated normally.	—
2	An error message is displayed.	The operation is terminated abnormally.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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2.60 Updating the Hardware Maintenance Agent (miacatupdate)

This command executes the updating of hardware maintenance agent by using the updating file obtained in advance.

2.60.1 Command line

This command uses the following command line.

- To update the hardware maintenance agent:
  miacatupdate file name to be updated

Table 2.60.1-1 shows the description of each option.

Table 2.60.1-1 Command Options

No.	Option	Description	Remarks
1	file name to be updated	Specifies the file for updating the hardware maintenance agent.	—

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2.60.2 Execution procedure

This subsection describes the procedure for executing the miacatupdate command.

NOTE: Acquire the file for updating in advance and store it on the maintenance PC.

(1) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.60.2-1 to upload the file for updating to the home directory for the maintenance personnel (/home/service). For more details about file uploading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230).
An example of using pscp is described here.

```
C:\>pscp -scp -unsafe C:\work\MIACAT-4251-4.i386.deb service@10.0.0.50:
```

Figure 2.60.2-1 Uploading to the home directory for the maintenance personnel

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Check the version of current hardware maintenance agent by using miacatget command. For the details of miacatget command, refer to Maintenance Tool "2.59 Check the Version Information of Hardware Maintenance Agent (miacatget)" (MNTT 02-3200).

(4) Put the file name that uploaded at the step (1) to an option, and execute miacatupdate command in accordance with the execution example of miacatupdate command that is shown in Figure 2.60.2-2.
When a message is displayed, take measures with reference to Maintenance Tool "2.60.3 Command termination messages and action to be taken" (MNTT 02-3260).
After completing the measures, retry the operation from (1).

```
$ sudo miacatupdate MIACAT-4251-4.i386.deb
```

Figure 2.60.2-2 Execution Example of the miacatupdate Command

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(5) Check that the version is changed by the miacatget command. For more details about miacatget command, refer to Maintenance Tool "2.59 Check the Version Information of Hardware Maintenance Agent (miacatget)" (MNTT 02-3200).
If the version is not changed, it failed the updating. Therefore, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

(6) After completing the updating, delete the file for updating that updated at the step (1) as shown in Figure 2.60.2-3. For more details about file deletion, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$ sudo rmfile MIACAT-4251-4.i386.deb
```

Figure 2.60.2-3 Deletion of files that uploaded

(7) Execute MIACAT setting wizard, and set the model code and the product code. For the details of MIACAT setting wizard, refer to Maintenance Tool "2.62 MIACAT Setup Wizard (ast_setup)" (MNTT 02-3340).

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2.60.3 Command termination messages and action to be taken

When you execute the miacatupdate command, messages might be displayed. Table 2.60.3-1 lists the action to be taken for each message ID.

Table 2.60.3-1 Message IDs and Actions to be Taken

No.	Massage	Description	Action
1	None	The update process is terminated completely.	—
2	An error message is displayed.	Abnormal termination occurs on the update process.	Check the following contents. (1) Refer to Maintenance Tool "2.60.1 Command line" (MNTT 02-3230), and then check if the specified command line is correct or not. (2) Check if the file to be updated is the file of the subject to be updated. (3) Check if the firmware file to be updated is stored directly under the home directory for the maintenance personnel (/home/service). (4) Check if the specified file name is correct. (5) Retry the operation after confirming the above contents. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.61 RC Information Acquisition (ccp)

This command acquires and displays the RC information of the node of executing.

2.61.1 Command line

This command uses the following command lines.

- To display the list of RC:
  ccp

- To acquire the RC information:
  ccp assist00

Table 2.61.1-1 shows the description of each option.

Table 2.61.1-1 Command Options

No.	Option	Description	Remarks
1	assist00	Execute the command interactively.	—

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2.61.2 Output format

The output format for the ccp command execution is shown in Figure 2.61.2-1 Output Format of the ccp Command.

```
Output format of  ccp [Without option]

MODEL CODE : [Model Code] / PRODUCT No. : [Product Serial Number]
RC Table rev. [Revision]
No.   date/time        Lv RE UID  EC Failure  Additional
----  ----------------- -- -- ---- ----------- ----------
[No]  [Date Time]     [Lv] [RC]


Output format of  ccp [With option]

**************** Command Menu ****************
dr  : Display RC
ds  : Display SEL
dm  : Display MAR
psa : PSA threshold setting
sr  : Save RC
q   : quit

Select command  :  [command]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.61.2-1 Output Format of the ccp Command

Table 2.61.2-1 describes the details about the items in Figure 2.61.2-1 Output Format of the ccp Command.

Table 2.61.2-1 Description of the Items in the Output Format

No.	Option	Description	Remarks
1	[Model Code]	Displays the model code.	—
2	[Product Serial Number]	Displays the product serial number.	—
3	[Revision]	Displays the revision.	—
4	[No]	Displays as indexed in the order from 1.	—
5	[Date Time]	Displays date and time of RC information the recorded in the form of YY/MM/DD hh:mm:ss.	YY: Year, MM: Month, DD: Day, hh: Hours, mm: Minutes, ss: Seconds
6	[Lv]	Put ** on the failure RC.	—
7	[RC]	Displays a RC.	[RE UID EC Failure Additional] will be the RC.
8	[command]	Enter the command that is displayed on Command Menu.	Only “sr” is used in the manual. As for the other contents, refer to the manuals for the target models.

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2.61.3 Execution procedure

This subsection describes the procedure for executing the ccp command.

If you do not use an option, refer to “(1) When executing without option”. If you use an option, refer to Maintenance Tool “(2) When executing with an option” (MNTT 02-3300).

(1) When executing without option

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Figure 2.61.3-1 shows the execution example of ccp command.
When RC is not displayed, or an error message is displayed, refer to Maintenance Tool “2.61.4 Command termination messages and action to be taken” (MNTT 02-3330).

```
$ sudo ccp

MODEL CODE : xxxx / PRODUCT No. : xxxx
RC table rev. xx-xx-xx
No.   date/time        Lv RE UID  EC Failure  Additional
----  ----------------- -- -- ---- ----------- ----------
   1  06/05/08 08:23:51    10 0100 A7 1F220000 6F06FFFF
   2  06/05/04 18:45:39 ** 10 0100 04 13006F00 6F00FFFF
   3  06/05/04 17:49:21    10 0100 A7 1F220000 6F06FFFF
   4  06/05/04 17:49:21    10 0100 A7 13000000 6F03FFFF
            (snip)
  15  06/05/04 17:49:18    10 0100 A7 13E50000 6FA50A18
  16  06/05/04 17:49:17    10 0100 A7 13E50000 6FA50A17
-- more (q:quit) --
```

Figure 2.61.3-1 Execution Example of the ccp Command (without option)

(c) To quit this operation, pressing “q” returns to the prompt window.

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(2) When executing with an option

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Figure 2.61.3-2 shows the execution example of ccp command.
Input "sr" on the "Select command" on the main menu, and then press [Enter] key.
When it is not displayed, or an error message is displayed, refer to Maintenance Tool "2.61.4 Command termination messages and action to be taken" (MNTT 02-3330).

```
$ sudo ccp assist00
**************** Command Menu ****************
dr  : Display RC
ds  : Display SEL
dm  : Display MAR
psa : PSA threshold setting
sr  : Save RC
q   : quit

Select command  :  sr
```

Figure 2.61.3-2 Execution Example of the ccp Command (with an option)

(c) A message of "Save RC LOG" is displayed on the window as shown in Figure 2.61.3-3. Input "y" and press [Enter] key.

```
Select command  :  sr

<<Save RCs- Save Reference Code log>>

Save RC LOG ? (y/[n]) : y
```

Figure 2.61.3-3 Display window after executing "sr"

(d) A file name where the RC LOG is stored is displayed in the frame shown in Figure 2.61.3-4. Write down the pull path of the storage destination.
By pressing [Enter] key returns to the window of Figure 2.61.3-2.

```
Save RC LOG ? (y/[n]) : y

RC LOG saved. (file /var/H_Densa/SMAL2/Log/AST/rclog.txt)
PRESS ENTER KEY
```

Figure 2.61.3-4 Display window of RC LOG storage destination

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(e) Execute a file transfer command on the command prompt of the maintenance PC with specifying the storage location noted down in step (d) as the source of downloading as shown in Figure 2.61.3-5 to download the RC log file. An example shows a case of downloading the file under (C:\work) as a place to be downloaded. For the information about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230).
An example of using pscp is described here.

```
C:\>pscp -scp -unsafe service@10.0.0.50:/var/H_Densa/SMAL2/Log/AST/rclog.txt C:\work
```

Figure 2.61.3-5 RC Log file downloading for Maintenance PC

(f) Press [Enter] key in the window of step (d), and return to the window as shown in Figure 2.61.3-2.

(g) Enter "dr" to the "select command", and then press [Enter] key.

(h) The "Display RC Menu" is displayed as shown in Figure 2.61.3-6. Enter "2" to select the "2". RC LOG Erase.", and then press [Enter] key. The RC data is deleted.

```
Select command : dr


<<Display RCs- Display Reference Code log and detail RCs>>

-------- Display RC Menu --------
 0 . RC List Display. (history)
 1 . RC DICT Refer.
 2 . RC LOG Erase.
 q . quit

(0-2, [q]) : 2
```

Figure 2.61.3-6 Display RC Menu window

(i) The deletion confirmation message is displayed as shown in Figure 2.61.3-7. Enter "y" and press [Enter] key.

```
(0-2, [q]) : 2


--- RC Log Erase ---

Erase RC LOG ? (y/[n]) :y
```

Figure 2.61.3-7 Deletion Confirmation Message window

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(j) The deletion completion message is displayed as shown in Figure 2.61.3-8. Pressing [Enter] key returns to the Display RC Menu window of step (h).

```
Erase RC LOG ? (y/[n]) : y

RC LOG erased.
PRESS ENTER KEY
```

Figure 2.61.3-8 Deletion Completion Message window

(k) Input "q" in the Display RC Menu as shown in Figure 2.61.3-9, and then press [Enter] key. The window returns to the main menu of step (d).

```
PRESS ENTER KEY


-------- Display RC Menu --------
 0 . RC List Display. (history)
 1 . RC DICT Refer.
 2 . RC LOG Erase.
 q . quit

(0-2, [q]) : q
```

Figure 2.61.3-9 Display RC Menu window

(*l*) Input "q" in the "Select command" of the main menu as shown in Figure 2.61.3-10, and then press [Enter] key. The window returns to the command prompt window.

```
**************** Command Menu ****************
dr  : Display RC
ds  : Display SEL
dm  : Display MAR
psa : PSA threshold setting
sr  : Save RC
q   : quit

Select command  :  q
```

Figure 2.61.3-10 Main Menu window

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2.61.4 Command termination messages and action to be taken

When you execute the ccp command, messages might be displayed. Table 2.61.4-1 lists the action to be taken for each message ID.

Table 2.61.4-1 Message IDs and Actions to be Taken

No.	Massage	Description	Action
1	None	The operation is terminated normally.	—
2	An error message is displayed.	The operation is terminated abnormally.	Check the following contents. (1) Refer to Maintenance Tool "2.61.1 Command line" (MNTT 02-3270), and then check if the specified command line is correct or not. (2) Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.62 MIACAT Setup Wizard (ast_setup)

This command uses to set the Mode1 code and Product code after updating the hardware maintenance agent.

NOTE: Execute this command only when the target model is a HA8000/RS220xK. For the other models, this command is executed automatically during the installation.

2.62.1 Command line

This command uses the following command line.

- When Model code or Product code is to be set.
  /opt/H_Densa/SMAL2/Program/ASSIST/ast_setup assist00

Table 2.62.1-1 shows the description of each option.

Table 2.62.1-1 Command Options

No.	Option	Description	Remarks
1	assist00	Execute interactively by displaying a main menu.	—

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2.62.2 Execution procedure

This subsection describes the executing procedure of ast_setup command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.62.2-1 shows an example when ast_setup command is executed.
When a message is displayed, refer to Maintenance Tool "2.62.3 Command termination messages and action to be taken" (MNTT 02-3370).

```
$ sudo /opt/H_Densa/SMAL2/Program/ASSIST/ast_setup assist00

==== ASSIST SETUP START ====

---- PRODUCT DATA ----
 Model code            : not set.
 Product code          : not set.
 IP address (Linux box) : not set.
 Alive Check           : NO
 Log collection permit  : NO
 Attached log permit    : YES
 YOBO-HOSYU contract    : NO
 IP-ADDR check enable   : YES

---- SELECT MENU ----
 0 . Set model code.
 1 . Set product code.
 2 . Set IP address (a-Box).
 3 . Set Alive Check permit.
 4 . Set log collection permit.
 5 . Set attached log permit.
 6 . Set YOBO-HOSYU contract.
 7 . Set IP-ADDR check enable.
 8 . Set log collection order permit.
 q . quit

(0-8, [q]) :
```

Figure 2.62.2-1 Execution Example of the ast_setup Command

(3) To set the Model code, input "0" to "(0-8, [q]) :", and press [Enter] key.
The Model code input window is displayed as in Figure 2.62.2-2. If the mode code has been set already, the current model code is displayed. To set or change the model code, input a model code in "Input ([quit])", and then press [Enter] key.

```
---- Set up Model code ----

    Model code : not set.
 Input ([quit]) : Model1
```

Figure 2.62.2-2 Model code input window

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The “Old model code” shows the previous Model code, and the “New model code” shows the new model code as in Figure 2.62.2-3. Input “y” to the “Rewrite Assist set up file. Confirm? (y/[n]) :”.
Model code is changed and the window returns to the window of Figure 2.62.2-1.

```
---- Set up Model code ----

    Model code : not set.
 Input ([quit]) : Model1

Old model code :
New model code : Model1
Rewrite ASSIST set up file. Confirm? (y/[n]) : y
```

Figure 2.62.2-3 Model code input confirmation window

(4) To set the Product code, input “1” to “(0-8, [q]) :”, and then press [Enter] key.
The Product code input window is displayed as shown in Figure 2.62.2-4. If the Product code is set already, the current Product code is displayed. To set or change the Product code, input a product code in the “input ([quit])”, and then press [Enter] key.

```
---- Set up Product code ----

   Product code : not set.
 Input ([quit]) :111111
```

Figure 2.62.2-4 Product code input window

The “Old product code” shows the previous product code, and the “New product code” shows the new product code as in Figure 2.62.2-5. Input “y” to the “Rewrite Assist set up file. Confirm? (y/[n]) :”.
Product code is changed and the window returns to the window of Figure 2.62.2-1.

```
---- Set up Product code ----

   Product code : not set.
 Input ([quit]) : 111111

Old product code :
New product code : 111111
Rewrite ASSIST set up file. Confirm? (y/[n]) : y
```

Figure 2.62.2-5 Product code input confirmation window

(5) Check the window in Figure 2.62.2-1, and make sure that the value input in the step (3) and (4) are set in the “Model code” and “Product code”.

(6) Input “q” and press [Enter] key. The setting wizard is terminated.

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2.62.3 Command termination messages and action to be taken

When you execute the ast_setup command, messages might be displayed. Table 2.62.3-1 lists the action to be taken for each message ID.

Table 2.62.3-1 Message IDs and Actions to be Taken

No.	Massage	Description	Action
1	None	The operation is terminated normally.	—
2	An error message is displayed.	The operation is terminated abnormally.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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2.63 Resource group Status Display (rgstatus)

This command shows the resource group status.

NOTE: Use this command only in the single node configuration. In the case of cluster configuration, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040).

2.63.1 Command line

This command uses the following command lines.

- To display the resource group status:
  rgstatus
- To display the command format on the standard output:
  rgstatus -h

Table 2.63.1-1 shows the description of each option.

Table 2.63.1-1 Command Options

No.	Option	Description	Remarks
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.63.2 Output format

The output format for the rgstatus command execution is shown in Figure 2.63.2-1 Output Format of the rgstatus Command.

```
Output format of rgstatus

[resource group status]/[error status]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.63.2-1 Output Format of the rgstatus Command

Table 2.63.2-1 describes the details about the items in Figure 2.63.2-1 Output Format of the rgstatus Command.

Table 2.63.2-1 Description of the Items in the Output Format

No.	Item	Contents
1	[resource group status]	Displays the resource group status. Refer to Table 2.63.2-2 for the status of resource group to be displayed.
2	[error status]	Displays the error status. Refer to Table 2.63.2-3 for the status of error to be displayed.

Table 2.63.2-2 Resource group status

No.	Item	Contents
1	Online	The resource group is in operation.
2	Online Pending	The resource group is in the process of starting.
3	Offline	The resource group is stopping.
4	Offline Pending	The resource group is in the process of terminating.
5	Partial Online	The resource is partly blocked.

Table 2.63.2-3 Error status

No.	Item	Contents
1	No error	The resource group is operated normally.
2	OS error	Failed to start/stop of the resource group. The failure cause must be removed by terminating forcibly.

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2.63.3 Execution procedure

This subsection describes the procedure for executing the rgstatus command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.63.3-1 shows an example when rgstatus command is executed.
When a message ID is displayed, take measures with reference to Maintenance Tool "2.63.4 Command termination messages and action to be taken" (MNTT 02-3410).
After completing the measures, retry the operation.

```
$ sudo rgstatus
Online/No error
```

Figure 2.63.3-1 Execution Example of the rgstatus Command

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2.63.4 Command termination messages and action to be taken

When you execute the rgstatus command, messages might be displayed. Table 2.63.4-1 lists the action to be taken for each message ID.

Table 2.63.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM06004-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM06124-E	An internal error occurred. Processing might be temporarily disabled.	An attempt to execute the command failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM06129-E	An attempt to stop the resource group has failed.	Failed to acquire the resource group.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM06145-W	The resource information update is not complete.	The resource information update is not completed.	Execute failover or failback. When an error occurs again, a new installation is needed to restore. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
6	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.

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Table 2.63.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
7	KAQM14132-E	No license is set to allow use of basic functionality.	The license to use basic function is not set (The message is different in the case the OS version is 3.0.1-XX or earlier.)	Set the license. Either request the system administrator to do it or execute the setting by the command. For the method of setting the license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
8	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM14136-I	Usage:<*command-syntax*>	The output of command format.	—
10	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. And then execute the command again.
11	KAQM14150-E	An error occurred in the system.	Failed the process to determine the execution environment.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.64 Displaying the Free Space Amount and the Whole Capacity Amount of User Disk (diskfreeget)

This command displays the free space and the whole capacity of the User Disk.

NOTE: Use this command only in the single node configuration. When no volume group exists, or two or more volume groups exist, an error message will be output. You can check the status of two or more volume groups by executing the vgrlist command. For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

2.64.1 Command line

This command uses the following command lines.

- To display the free space and the whole capacity of a User Disk.
  diskfreeget
- To display the command format on the standard output:
  diskfreeget -h

Table 2.64.1-1 shows the description of each option.

Table 2.64.1-1 Command Options

No.	Option	Description	Remarks
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.64.2 Output format

The output format for the diskfreeget command execution is shown in Figure 2.64.2-1 Output Format of the diskfreeget Command.

```
Output format of diskfreeget

Total disk size(GB)   :[A total capacity of User Disk]
Free disk size(GB)    :[A free space of User Disk]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.64.2-1 Output Format of the diskfreeget Command

Table 2.64.2-1 describes the details about the items in Figure 2.64.2-1 Output Format of the diskfreeget Command.

Table 2.64.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[A total capacity of User Disk]	Displays the total capacity of User Disk in the unit of GB. (Integer)
2	[A free space of User Disk]	Displays the free space of User Disk in the unit of GB. (Integer).

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2.64.3 Execution procedure

This subsection describes the procedure for executing the diskfreeget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.64.3-1 shows an example of executing diskfreeget command.
When the message ID is shown, take measures with reference to Maintenance Tool "2.64.4 Command termination messages and action to be taken" (MNTT 02-3460).
After completing the measures, retry the operation.

```
$sudo diskfreeget
Total disk size(GB)  : 3543
Free disk size(GB)   : 3532
```

Figure 2.64.3-1 Execution Example of the diskfreeget Command

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2.64.4 Command termination messages and action to be taken

When you execute the diskfreeget command, messages might be displayed. Table 2.64.4-1 lists the action to be taken for each message ID.

Table 2.64.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM04242-E	This operation cannot be performed because a volume group has not been created.	This operation cannot be performed because a volume group has not been created.	Request the system administrator to create a volume group and execute the command again.
2	KAQM04243-E	This operation cannot be performed because multiple volume groups exist.	This operation cannot be performed because multiple volume groups exist.	Execute the vgrlist command to display the capacity of the multiple volume groups.
3	KAQM04031-E	A conflict with another system administrator's operation or an internal error may have occurred.	A conflict with another system administrator's operation or an internal error may have occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM04126-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM04181-E	Information of user disk could not be acquired. Acquisition of volume group information failed. (*)	Information of user disk could not be acquired. *: When the OS version is 4.0.0-XX or later, the message in the left column will be displayed. Acquisition of the volume group information failed. An error may have occurred on the volume group or there may be a problem with the connection to the storage system.	Execute the command again after a while. If the error occurs again, execute "C.2.2 Determination Procedure when a Failure Occurred." If you are referring to here from Troubleshooting, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.64.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
6	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
7	KAQM14131-E	A syntax error exists in the parameter (<parameter>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
8	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
10	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—

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2.65 User LU Mapping Display (lumaplist)

This command indicates the correspondence between the mapped user LUs and the information of the disk array (model names and serial numbers).

NOTE:
- This command can be executed if the OS version is 3.0.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- When the OS version is 3.2.3-XX or earlier, this command is not supported in the single node configuration.

2.65.1 Command line

This command uses the following command lines.

- To display the consistency of mapping between the nodes:
  lumaplist [-c] --allnode
- To display the information of a specific user LU:
  lumaplist [-c] [-v] -n User LU[,User LU,...]
- To display the information of a specific model:
  lumaplist [-c] [-v] -m model name [-s serial number [-l LDEV[,LDEV,...]]]
- To display the information of a user LU:
  lumaplist [-c] [-v] [-a]
- To display the command format on the standard output:
  lumaplist -h

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Table 2.65.1-1 shows the description of each option.

Table 2.65.1-1 Command Options

No.	Option	Description	Remarks
1	--allnode	Specify for displaying the consistency between the user LU information and the nodes in the both nodes	Ignored when specified in the single node configuration.
2	-n *User LU* [,*User LU*...]	Specify for displaying the information of a specific User LU. For specifying multiple User LUs, specify by separating by commas.	—
3	-m mode name	Specify the model of the target disk array.	The model that can be specified is shown below: • AMS : DF700XS, DF700S, DF700M, DF700H, DF800S, DF800M, DF800H, DF800ES, DF800EM, DF800EH, or DF800EXC • AMS or the name of the specified model : DF800EXS • SMS : SA800, SA810 • HUS : DF850XS, DF850S, or DF850MH • NCS55 : RAID500RK • USP : RAID500FC • USP_V : RAID600 FC • USP_VM : RAID600 RK • VSP : RAID700 • VSP_G1000 : RAID800 • HUS_VM : HM700 • VSP_Gx00 : HM800 (any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850 (any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900) When this option is specified, LUs on the internal drive are not displayed.
4	-s serial number	Specify the serial number of the model.	Specify the -m option in item 3 if this option is specified.
5	-l [*LDEV*,[*LDEV*,...]]	Specify for displaying the information of a specific LDEV. For specifying multiple LDEVs, specify by separating by commas.	Specify the -m option in item 3 and the -s option in item 4 if this option is specified.
6	-a	Specify for displaying all User LUs regardless of whether they are mapped or not. The information of all the mapped User LUs is displayed if this option is omitted.	—
7	-c	Specify for displaying information separated by colons (:).	—
8	-v	Specify for displaying the function or the status of a User LU as additional information.	Unless otherwise special instruction, this option should not be set.
9	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.65.2 Output format

The output format for the lumaplist command execution is shown in Figure 2.65.2-1 Output Format of the lumaplist Command.

```
Output format of lumaplist [Without option]

LUN    Target    Model          serial          LDEV(  hex)  type          size     Mismatch
[LUN] [Target] [model-name] [product serial number]  [LDEV(hex)]   [drive-type]  [size]
[consistency]

(Repeat for the number of target items)
*: Values acquired from the system are displayed within [  ].
```

Figure 2.65.2-1 Output Format of the lumaplist Command.

Table 2.65.2-1 describes the details about the items in Figure 2.65.2-1 Output Format of the lumaplist Command.

Table 2.65.2-1 Description of the Items in the Output Format

No.	Option	Description	Remarks
1	[LUN]	The LU number is displayed in hexadecimal.	For the OS version 4.2.2-XX and later, the value larger than FF is displayed in four digits.
2	[Target]	The target is displayed.	—
3	[model-name]	The model of the target disk array is displayed.	Refer to the remarks of the item 3 in Table 2.65.1-1 for the displayed model. Internal drive LUs are displayed as “INTERNAL.”
4	[product serial number]	The product serial number of the target disk array is displayed in decimal.	—
5	[LDEV(hex)]	The LDEV is displayed in decimal notation. The hexadecimal notation is in the parenthesis.	—
6	[type]	Displays the type of disk drives making up the LU. “-” is displayed in case of a failure.	The displayed drive type is “FC/SAS”, “SATA”, or “SSD”, “SAS7K”. In case of a path failure, an external disk array, or an LU of USP V, USP VM, VSP, VSP G1000, VSP Gx00/VSP Fx00, HUS VM, and HDP (including HDT), “-” is displayed. When the [model-name] is displayed “INTERNAL” and installed disk is “SSD”, displayed drive type is “SATA”.
7	[size]	The LU size (unit: GB) is displayed in decimal. “-” is displayed in case of a failure.	—
8	Mismatch	The consistency between the nodes is displayed. “-” is displayed for the LU mapped to the both nodes. “*” is displayed for the LU mapped only to one of the nodes.	If “*” is displayed, request the system administrator to map the target LDEV to the both nodes.

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2.65.3 Execution procedure

This subsection describes the procedure for executing the lumaplist command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.65.3-1 shows an example of executing the lumaplist command.
Figure 2.65.3-2 shows an execution example in case the numbers of LU paths are not consistent between the nodes
In the status shown in Figure 2.65.3-2, it is necessary to request the system administrator to review the mapping.
If a message ID is displayed, refer to Maintenance Tool "2.65.4 Command termination messages and action to be taken" (MNTT 02-3510).
Perform a propter action and execute the command again.

```
$sudo lumaplist --allnode
LUN  Target    Model    serial   LDEV(  hex)   type      size  Mismatch
 00  N0-T000   AMS    85011261    22(  0016)   FC/SAS   1.000GB  -
 00  N1-T000   AMS    85011261    22(  0016)   FC/SAS   1.000GB  -
 01  N0-T000   AMS    85011261    69(  0045)   SATA   100.000GB  -
 01  N1-T000   AMS    85011261    69(  0045)   SATA   100.000GB  -
 02  N0-T001   VSP       10034   96(000060)   FC/SAS   3.000GB  -
 02  N1-T001   VSP       10034   96(000060)   FC/SAS   3.000GB  -
```

Figure 2.65.3-1 Execution Example of the lumaplist Command (in normal status)

```
$sudo lumaplist --allnode
LUN  Target    Model    serial   LDEV(  hex)   type      size  Mismatch
 00  N0-T000   AMS    85011261    22(  0016)   FC/SAS   1.000GB  -
 00  N1-T000   AMS    85011261    22(  0016)   FC/SAS   1.000GB  -
 01  N0-T000   AMS    85011261    69(  0045)   SATA   100.000GB  *
 02  N0-T001   VSP       10034   96(000060)   FC/SAS   3.000GB  -
 02  N1-T001   VSP       10034   96(000060)   FC/SAS   3.000GB  -
```

Figure 2.65.3-2 Execution Example of the lumaplist Command (in case of LU path inconsistency)

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2.65.4 Command termination messages and action to be taken

When you execute the lumaplist command, messages might be displayed. Table 2.65.4-1 lists the action to be taken for each message ID.

Table 2.65.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource used for the required processing is being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
3	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
4	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
5	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
6	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
7	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
8	KAQM33008-E	A system error has occurred.	A system error has occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).

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Table 2.65.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
9	KAQM33026-E	The specified model name (<*model name*>) is invalid.	The specified model name is invalid.	Confirm the specified name and re-execute.
10	KAQM33027-E	The specified serial number (<*serial number*>) is outside the valid range.	The specified product serial number is outside the valid range.	Confirm the specified product serial number and re-execute.
11	KAQM33028-E	The specified volume (<*specified volume*>) is invalid.	The specified volume is invalid.	Confirm the specified volume and re-execute. The word "volume" is displayed as "LDEV number" when the OS version is 3.1.0-XX or earlier.
12	KAQM33044-E	An attempt to access the other node in the cluster failed.	The other node in the cluster might be down or there might be an error occurring in the network.	Confirm the following items. 1. Confirm that the OS of one node in the cluster is not terminated. 2. Confirm that there is no error occurring in the network. If the same error is displayed after re-execution, perform the processing described in "C.2.2 Determination Procedure when a Failure Occurred".

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2.66 Saving System Setting Information File (syslusave)

This command comprises the function of saving the system setting information file which is necessary for restoring the OS Disk/cluster management.

NOTE:
- This command can be executed if the OS version is 3.0.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- This command must be executed before installing the updated versions of the OS if the OS version is 3.0.0-XX or later.

2.66.1 Command line

This command uses the following command lines.

- To save the system setting information file:
  syslusave –o [--vup]

- To display the command format on the standard output:
  syslusave -h

Table 2.66.1-1 shows the description of each option.

Table 2.66.1-1 Command Options

No.	Option	Description	Remarks
1	-o	Specify for saving the system setting information file	Saved under /home/service.
2	--vup	Specify for preventing failure to save backup before update/installation. If this option is not specified or at the time of update/installation when 25 hours or more elapses after executing this option, a message for confirming whether backup was executed or not is displayed. This option must be specified in case the OS version is 3.1.0-XX or later. For the details of confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).	
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.66.2 Execution procedure

This subsection describes the procedure for executing the alulist command.

NOTE: Acquire permission for execution from the system administrator before executing this command. In addition, also notify that the backup information is updated to the latest status at the time of the execution.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(1-1) In the case of the cluster configuration, execute clstatus command and check that "Node status" is "UP", in the case resource group is in operation, check that "Resource group status" is "Online/No error" or "Offline/No error".
For how to check, refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040) for clstatus command.
This step is not necessary to execute in the case of the single node configuration.

(2) Figure 2.66.2-1 shows an example of executing the syslusave command in case the OS version is 3.0.1-XX or earlier, and Figure 2.66.2-1-1 shows an example of executing the syslusave command in case the OS version is 3.1.0-XX or later.
For the details of confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
If a message ID is displayed, refer to Maintenance Tool "2.66.3 Command termination messages and action to be taken" (MNTT 02-3560).

```
$sudo syslusave –o
```

Figure 2.66.2-1 Execution Example of the syslusave Command (in 3.0.1-XX or earlier version)

```
$sudo syslusave -o --vup
```

Figure 2.66.2-1-1 Execution Example of the syslusave Command (in 3.1.0-XX or later version)

(3) After performing (2), a syslusave completion message (KAQM13128-I) in Fig. 2.66.2-2 is displayed and the file name of the system setting information file enclosed with a thick box is displayed in the message. This must be recorded.

```
$sudo syslusave –o --vup
KAQM13128-I The settings were successfully saved. Transfer the settings file to an external location, and
then erase the file stored in the system. (output file=sysbk_FC-GWFBQLNBX_20090508_1020.tgz)
```

Figure 2.66.2-2 syslusave completion message (KAQM13128-I)

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(4) Execute a file transfer command on the command prompt of the maintenance PC to download the system setting information file recorded in step (3) as shown in Fig. 2.66.2-3. Note that only the file name can be specified because the file is downloaded under the home directory for the maintenance personnel (/home/service). Refer to Maintenance Tool "1.3.5 Commands used for transferring files (2) Downloading files to the maintenance PC" (MNTT 01-0240) for the details of downloading.
At this step, an example where pscp is used is shown.

```
C:\>pscp -scp -unsafe service@10.0.0.50:sysbk_* C:\work
```

Figure 2.66.2-3 Downloading system setting information file to maintenance PC

(5) Delete the system setting information file downloaded at (4) as shown in Fig. 2.66.2-4. Refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660) for file deletion.

```
$ sudo rmfile sysbk_*
```

Figure 2.66.2-4 Deletion downloaded file

NOTE: The downloaded system setting information file is used in the restoration operation if the update installation performed after this procedure fails and a new installation becomes necessary.

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2.66.3 Command termination messages and action to be taken

When you execute the syslusave command, messages might be displayed. Table 2.65.4-1 lists the action to be taken for each message ID.

Table 2.66.3-1 Message IDs and Actions to be Taken (1/6)

No.	Message ID	Message	Description	Action
1	KAQM13019-E	An attempt to read the management information has failed.	An attempt to read the management information has failed	Confirm the setting of the OS Disk and the cluster management LU and whether an error exists or not and then re-execute. However, if “KAQG72026-E” SIM is output in the other node, execute the forcelurelease command from the other node and then re-execute. Refer to Maintenance Tool “2.45 Forced Release of LU Access Protection for the Cluster Management LU and All Users LU (forcelurelease)” (MNTT 02-2560) for the forcelurelease command and perform the procedure (4) and (5).
2	KAQM13037-E	An attempt to update the management information has failed.	An attempt to update the management information has failed.	
3	KAQM13065-E	A timeout occurred during access of management information.	A timeout occurred during access of management information.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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Table 2.66.3-1 Message IDs and Actions to be Taken (2/6)

No.	Message ID	Message	Description	Action
4	KAQM13069-E	The operation could not be executed because the resource group is not running normally, or the resource group might be failing over.	The resource group might be in the Offline status or might be performed failover.	Execute the clstatus command in the cluster configuration, confirm that the cluster, the node, and the resource group are normally started, and perform save manually. Refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040) for the confirmation. In the single node configuration, execute the rgstatus command, confirm that the resource group are normally started, and perform save manually. Refer to Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380) for the confirmation.
5	KAQM13071-E	The operation could not be executed because an attempt to save the OS Disk has failed. (node=<*node*>)	There is a node where an error occurred in the OS Disk.	Confirm the setting of the OS Disk and the cluster management LU and whether an error exists or not and then re-execute. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM13072-E	The operation could not be executed because there is not enough space on the OS Disk.	The operation could not be executed because there is not enough space on the OS Disk.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.66.3-1 Message IDs and Actions to be Taken (3/6)

No.	Message ID	Message	Description	Action
7	KAQM13073-E	The operation could not be executed because an attempt to create a download file failed. (node=<*node*>)	There is a node where an error occurred in the OS Disk.	Confirm the setting of the OS Disk and the cluster management LU and whether an error exists or not and then re-execute. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM13074-E	The operation could not be executed because the node cannot communicate.	The node incapable of communication by the Management port connection exists.	Confirm the following items. •Collaborate with the system administrator and confirm that the setting contents of the Management port interface or the routing does not affect the communication between the nodes. • Confirm that the node is terminated. • Confirm that no error occurred in the other networks than the Management port. Refer to "B.3.1 Displaying the Hardware Status (hwstatus)" for the confirmation. After confirming the items above, re-execute. If an error still occurs, perform "C.2.2 Determination Procedure when a Failure Occurred".
9	KAQM13076-E	The operation could not be executed because an attempt to save the cluster management LU failed.	There is a node where an error occurs in the cluster management LU.	Confirm the setting of the OS Disk and the cluster management LU and whether an error exists or not and then re-execute. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.66.3-1 Message IDs and Actions to be Taken (4/6)

No.	Message ID	Message	Description	Action
10	KAQM13080-E	The operation could not be executed because a timeout occurred while saving the OS Disk. (node=<*node*>)	The operation could not be executed because a timeout occurred while saving the OS Disk.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
11	KAQM13081-E	The operation could not be executed because a timeout occurred while saving the cluster management LU.	The operation could not be executed because a timeout occurred while saving the cluster management LU.	
12	KAQM13083-E	An attempt to batch save the system settings has failed.	Saving the system setting information file failed.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
13	KAQM13087-E	The operation could not be executed because an attempt to create a download file failed.	An error occurred in the OS Disk.	Confirm the setting of the OS Disk and the cluster management LU and whether an error exists or not and then re-execute. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
14	KAQM13128-I	The settings were successfully saved. Transfer the settings file to an external location, and then erase the file stored in the system. (output file = <*output file*>)	The setting information is saved.	—
15	KAQM13129-E	An attempt to batch save the system settings and output files has failed.	Batch saving of the system setting information and the file output failed.	Confirm the setting of the OS Disk and the cluster management LU and whether an error exists or not and then re-execute. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.66.3-1 Message IDs and Actions to be Taken (5/6)

No.	Message ID	Message	Description	Action
16	KAQM13145-E	Processing was canceled because there is already a settings file in the output directory.	A system setting information file exists under (/home/service).	Re-execute after performing the procedure (4) and (5) in Maintenance Tool "2.66.2 Execution procedure" (MNTT 02-3540) for the existing system information files.
17	KAQM13147-E	The operation could not be performed because there is not enough free space in the output directory.	The capacity of the output directory might not be enough.	Delete the unnecessary file under (/home/service) and then re-execute. Refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660) for file deletion.
18	KAQM13169-E	The operation could not be executed possibly because a resource group is not running normally.	The resource group might be in the Offline status.	Execute the clstatus command in the cluster configuration and the rgstatus command in the single node configuration, confirm that the resource group is normally started, and perform save manually. Refer to Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040) for the confirmation by the clstatus command. Refer to Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380) for the confirmation by the rgstatus command.
19	KAQM13193-E	The operation could not be executed because the virtual server is not running normally.	The Virtual Server might not be running normally.	Execute the vnaslist command, confirm that the Virtual Server is started up normally, and execute manual save. For the details of confirmation by using the vnaslist command, refer to Maintenance Tool "2.74 List of Virtual Servers (vnaslist)" (MNTT 02-3900).
20	KAQM13221-E	An attempt to save system settings was cancelled because the key used for Data At Rest Encryption might be corrupted.	Save of the system setting information is aborted as the encryption key may be corrupted..	Ask the system administrator to restore the previously saved system information. In this case, let the system administrator know that system information changed after the last saved date is not recovered.
21	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource used for the required processing is being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.66.3-1 Message IDs and Actions to be Taken (6/6)

No.	Message ID	Message	Description	Action
22	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
23	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
24	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
25	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
26	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
27	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
28	KAQM14150-E	An error occurred in the system.	An error occurred in the system.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).

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2.67 Setting for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnset)

This command executes the setting for automatically relearn (discharge-and-charge operation which is regularly performed as the normality check of the internal RAID battery) of the internal RAID battery (battery backup unit installed in the RAID card).

NOTE:
- This command can be executed if the OS version is only 3.0.0-XX. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
  To set for automatically relearn in the case of OS version is 3.0.1-XX or later, bburelearnset command can be used to set the same settings. For the detail of bburelearnset command, refer to Maintenance Tool "2.87 Setting Relearn Schedule of Cache Backup Module and Enabling/disabling Schedule Execution (bburelearnset)" (MNTT 02-4530).
- Do not execute the setting by this command unless specifically instructed.
- This command can be executed only in the single node configuration that is not connected with the disk array subsystem.

2.67.1 Command line

This command uses the following command lines.

- To automatically relearn perform of the internal RAID battery:
  bbuautolearnset --on
- To not automatically relearn perform of the internal RAID battery:
  bbuautolearnset --off
- To display the command format on the standard output:
  bbuautolearnset -h

Table 2.67.1-1 shows the description of each option.

Table 2.67.1-1 Command Options

No.	Option	Description	Remarks
1	--on	Specify to automatically relearn perform of the internal RAID battery.	—
2	--off	Specify to not automatically relearn perform of the internal RAID battery	—
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.67.2 Execution procedure

This subsection describes the procedure for executing the bbuautolearnset command.

NOTE: The relearn of the internal RAID battery is set to be automatically performed by default. Do not set the relearn not to be automatically performed unless specifically instructed.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the bbuautolearnset command in accordance with the bbuautolearnset command execution example in Fig. 2.67.2-1.
When the message ID is shown, take measures with reference to Maintenance Tool "2.67.3 Command termination messages and action to be taken" (MNTT 02-3640).
After completing the measures, retry the operation.

```
$sudo bbuautolearnset --off
```

Figure 2.67.2-1 Execution Example of the bbuautolearnset Command

(3) After the setting is completed, confirm that the setting is successful by the bbuautolearnget command. As for the bbuautolearnget command, refer to Maintenance Tool "2.68 Displaying the Set Value for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnget)" (MNTT 02-3650).

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2.67.3 Command termination messages and action to be taken

When you execute the syslusave command, messages might be displayed. Table 2.67.3-1 lists the action to be taken for each message ID.

Table 2.67.3-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter <*parameter*>.	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).

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2.68 Displaying the Set Value for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnget)

This command displays the set value for automatically relearn (discharge-and-charge operation which is regularly performed as the normality check of the internal RAID battery) of the internal RAID battery (battery backup unit installed in the RAID card).

NOTE:
- This command can be executed if the OS version is only 3.0.0-XX. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
  To display the set value for automatically relearn in the case of OS version is 3.0.1-XX or later, bburelearnget command can be used to display the same settings. For the detail of bburelearnget command, refer to Maintenance Tool "2.86 Displaying Relearn Schedule of Cache Backup Module and Setting Status (enabled/disabled) of Schedule Execution (bburelearnget)" (MNTT 02-4500).
- This command can be executed only in the single node configuration that is not connected with the disk array subsystem.

2.68.1 Command line

This command uses the following command line.

- To display the set value for automatically relearn performing of the internal RAID battery:
  bbuautolearnget

2.68.2 Output format

The output format for the bbuautolearnget command execution is shown in Figure 2.68.2-1 Output Format of the bbuautolearnget Command.

```
Output format of bbuautolearnget

Auto-Learn Mode:[set value]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.68.2-1 Output Format of the bbuautolearnget Command.

Table 2.68.2-1 describes the details about the items in Figure 2.68.2-1 Output Format of the lumaplist Command.

Table 2.68.2-1 Description of the Items in the Output Format

No.	Option	Description
1	[Set value]	Enabled : To automatically relearn perform of the internal RAID battery Disabled : To not automatically relearn perform of the internal RAID battery

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2.68.3 Execution procedure

This subsection describes the procedure for executing the bbuautolearnget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.68.2-1 shows an example of executing the bbuautolearnget command.
When the message ID is shown, take measures with reference to Maintenance Tool "2.68.4 Command termination messages and action to be taken" (MNTT 02-3670).
After completing the measures, retry the operation.

```
$sudo bbuautolearnget
Auto-Learn Mode: Disabled
```

Figure 2.68.3-1 Execution Example of the bbuautolearnget Command

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2.68.4 Command termination messages and action to be taken

When you execute the syslusave command, messages might be displayed. Table 2.68.4-1 lists the action to be taken for each message ID.

Table 2.68.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).

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2.69 Setting the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuset)

This command executes the setting of the cache write mode when the battery level of the internal RAID battery (battery backup unit installed in the RAID card) falls.

NOTE:
- This command can be executed if the OS version is 3.0.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- This command is basically assumed to be executed by the system administrator. Therefore, the management apparatus must not execute this command unless specifically instructed.
- This command can be executed only in the single node configuration that is not connected with the disk array subsystem.

2.69.1 Command line

This command uses the following command lines.

- To set the cache write mode when the battery level of the internal RAID battery falls to Write Back:
  cachedbadbbuset --wb

- To set the cache write mode when the battery level of the internal RAID battery falls to Write Through:
  cachedbadbbuset --wt

- To display the command format on the standard output:
  cachedbadbbuset -h

Table 2.69.1-1 shows the description of each option.

Table 2.69.1-1 Command Options

No.	Option	Description	Remarks
1	--wb	The cache write mode when the battery level of the internal RAID battery falls is set to Write Back.	If power supply to HDI is lost, the data not written to the user disk might be lost.
2	--wt	The cache write mode when the battery level of the internal RAID battery falls is set to Write Through.	The performance might be deteriorated if the battery level falls.
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.69.2 Execution procedure

This subsection describes the procedure for executing the cachedbadbbuset command.

NOTE:
- The cache write mode when the battery level falls is set to Write Through by default.
- Confirm the write mode to be set with the system administrator in advance.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Confirm the current write mode by the cachedbadbbuget command.
For details about the cachedbadbbuget command, refer to Maintenance Tool "2.70 Displaying the Set Value for the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuget)" (MNTT 02-3710).

(3) Figure 2.69.2-1 shows the command execution example in the case where the cache write mode is set to Write Back and Figure 2.69.2-2 shows the command execution example in the case where the cache write mode is set to Write Through.

When the message ID is shown, take measures with reference to Maintenance Tool "2.69.3 Command termination messages and action to be taken" (MNTT 02-3700).
After completing the measures, retry the operation.

```
$sudo cachedbadbbuset --wb
```

Figure 2.69.2-1 Execution Example of the cachedbadbbuset Command (when Write Back is set)

```
$sudo cachedbadbbuset --wt
```

Figure 2.69.2-2 Execution Example of the cachedbadbbuset Command (when Write Through is set)

(4) After the setting is completed, confirm that the setting is successful by the cachedbadbbuget command. For details about the cachedbadbbuget command, refer to Maintenance Tool "2.70 Displaying the Set Value for the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuget)" (MNTT 02-3710).

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2.69.3 Command termination messages and action to be taken

When you execute the syslusave command, messages might be displayed. Table 2.69.3-1 lists the action to be taken for each message ID.

Table 2.69.3-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter <*parameter*>.	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
5	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).

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2.70 Displaying the Set Value for the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuget)

This command displays the set value of the cache write mode when the battery level of the internal RAID battery (battery backup unit installed in the RAID card) falls.

NOTE:
- This command can be executed if the OS version is 3.0.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- This command can be executed only in the single node configuration that is not connected with the disk array subsystem.

2.70.1 Command line

This command uses the following command lines.

- To display the set value for the cache write mode:
  cachedbadbbuget

- To display the command format on the standard output:
  cachedbadbbuget -h

Table 2.70.1-1 shows the description of each option.

Table 2.70.1-1 Command Options

No.	Option	Description	Remarks
1	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.70.2 Output format

The output format for the cachedbadbbuget command execution is shown in Figure 2.70.2-1 Output Format of the cachedbadbbuget Command.

```
Output format of cachedbadbbuget

Default Cache Policy: Write Back, ReadAheadNone, Direct, [cache write mode when the battery level falls]
Current Cache Policy: [cache write mode], ReadAheadNone, Direct, [Cache write mode when the battery level falls]

*: Values acquired from the system are displayed within [  ].
```

Figure 2.70.2-1 Output Format of the cachedbadbbuget Command.

Table 2.70.2-1 describes the details about the items in Figure 2.70.2-1 Output Format of the cachedbadbbuget Command.

Table 2.70.2-1 Description of the Items in the Output Format

No.	Option	Description	Remarks
1	[Cache write mode]	Write Back: if the cache write mode is Write Back Write Through: if the cache write mode is Write Through	Operates by Write Back shown in Default Cache Policy in the normal operation. Operates by[cache write mode] shown in Current Cache Policy when the battery level falls
2	[Cache write mode when the battery level falls]	Write Cache OK if Bad BBU: if the result of setting by the cachedbadbbuset command is Write Back No Write Cache if Bad BBU: if the result of setting by the cachedbadbbuset command is Write Through	For details about the cachedbadbbuset command, refer to Maintenance Tool "2.69 Setting the Cache Write Mode when the Battery Level of the Internal RAID Battery Falls (cachedbadbbuset)" (MNTT 02-3680).

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2.70.3 Execution procedure

This subsection describes the procedure for executing the cachedbadbbuget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.70.3-1 shows the cachedbadbbuget command execution example in the case where the cache write mode is set to Write Back, Figure 2.70.3-2 shows the cachedbadbbuget command execution example in the case where the cache write mode is set to Write Through, and Figure 2.70.3-3 shows the cachedbadbbuget command execution example in the case where the cache write mode is set to Write Through and the battery level falls.
When the message ID is shown, take measures with reference to Maintenance Tool "2.70.4 Command termination messages and action to be taken" (MNTT 02-3740).
After completing the measures, retry the operation.

```
$sudo cachedbadbbuget
Default Cache Policy: WriteBack, ReadAheadNone, Direct, Write Cache OK if Bad BBU
Current Cache Policy: WriteBack, ReadAheadNone, Direct, Write Cache OK if Bad BBU
```

Figure 2.70.3-1 Execution Example of the cachedbadbbuget Command (when Write Back is set)

```
$sudo cachedbadbbuget
Default Cache Policy: WriteBack, ReadAheadNone, Direct, No Write Cache if Bad BBU
Current Cache Policy: WriteBack, ReadAheadNone, Direct, No Write Cache if Bad BBU
```

Figure 2.70.3-2 Execution Example of the cachedbadbbuget Command (when Write Through is set)

```
$sudo cachedbadbbuget
Default Cache Policy: WriteBack, ReadAheadNone, Direct, No Write Cache if Bad BBU
Current Cache Policy: WriteThrough, ReadAheadNone, Direct, No Write Cache if Bad BBU
```

Figure 2.70.3-3 Execution Example of the cachedbadbbuget Command (when Write Through is set and the battery level falls)

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2.70.4 Command termination messages and action to be taken

When you execute the syslusave command, messages might be displayed. Table 2.70.4-1 lists the action to be taken for each message ID.

Table 2.70.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter <*parameter*>.	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
4	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).

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2.71 Operation Confirmation of the Tape Device is Performed (tapetest)

This command is a function for performing read/write for the tape device connected by FC from the node and confirming whether the device operates normally.

NOTE:
- This command can be executed if the OS version is 3.0.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- The division that performs the confirmation is supposed to prepare the tape for performing the write test.

2.71.1 Command line

This command uses the following command lines.

- To confirm the operation of the tape device:
  tapetest [-y] <device file name> [-nomsg]

- To display the command format on the standard output:
  cachedbadbbuget -h

Table 2.71.1-1 shows the description of each option.

Table 2.71.1-1 Command Options

No.	Option	Description	Remarks
1	-y	Inhibits the output of the confirmation message.	Do not perform the operation with this option unless specifically instructed.
2	< device file name >	Specifies the device file name for which the operation confirmation is performed.	The specified device file name is in the form shown below. /dev/<WWN>/nst<xx> <WWN>: tape drive WWN(Alphabetic letters must be lower-case) <xx>: 2-digit in hex (Alphabetic letters must be capital) E.g. /dev/100000e00202d78d/nst01
3	-nomsg	Inhibits the standard output and error output of the confirmation message.	Do not perform the operation with this option unless specifically instructed.
4	-h	Output the command format to the standard output.	KAQB11708-I is displayed at the time of executing.

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2.71.2 Execution procedure

This subsection describes the procedure for executing the tapetest command.

NOTE:
- Confirm the operation is not performed for any tape devices before executing the command.
- Execute this command per tape drive.
- Execute this command for one node at a time.

(1) Confirm with the system administrator whether the connection of the tape device is completed or not.

(2) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(3) Execute the tapelist -d command as shown in Fig. 2.71.2-1 and record all the [Path]'s whose Status is "D, D".(Part boxed with a thick frame in the figure below)
For details about the tapelist command, refer to Maintenance Tool "2.37 Displaying the Information of Tape Devices (tapelist)" (MNTT 02-2170).

```
$ sudo tapelist -d
Mar 16 15:45:50 KAQB11500-I tapelist command execution has started.
Mar 16 15:45:50 KAQB12225-I The list of tape device information will now be displayed.
WWN              LUN Status Model          Type            Path
-----------------------------------------------------------------------------------------
100000e0022216cc   0 D,D   Ultrium 3-SCSI   Sequential-Access /dev/100000e0022216cc/nst00
100000e0022216cd   0 D,D   Ultrium 3-SCSI   Sequential-Access /dev/100000e0022216cd/nst00
Mar 16 15:45:50 KAQB11501-I tapelist command has finished.
```

Figure 2.71.2-1 Execution Example of the tapelist Command

(4) Request the system administrator to store a tape in the tape drive for which you want to perform the test.

(5) Specify the [path] recorded in the procedure (3) and execute the tapetest command as shown in Fig. 2.71.2-2.
When the message ID is shown, take measures with reference to Maintenance Tool "2.71.3 Command termination messages and action to be taken" (MNTT 02-3780).
Take appropriate action and perform step (3) and later again.

```
$ sudo tapetest /dev/100000e0022216cc/nst00
```

Figure 2.71.2-2 Execution Example of the tapelist Command

(6) As the confirmation message (KAQB12258-Q) is output as shown in Fig. 2.71.2-3 when (5) is executed, input y and execute. The test command execution start message (KAQB11500-I) is output and the operation confirmation for the tape device is performed.
To cancel the execution, enter "n".

```
$ sudo tapetest /dev/100000e0022216cc/nst00
Mar 16 15:45:50 KAQB12258-Q Tape device operation will now be confirmed. Do you want to
continue? (y/n) y
Mar 16 15:45:50 KAQB11500-I tapetest command execution has started.
```

Figure 2.71.2-3 Confirmation Message (KAQB12258-Q) of executing tapetest

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(7) If the operation confirmation for the tape device is normally terminated after executing (6), the test command execution completion message (KAQB11501-I) is output as shown in Fig. 2.71.2-4.
If the operation confirmation for the tape device is abnormally terminated, the message ID is output as shown in Fig. 2.71.2-5 and the error information is also output under "--Error detail--".
If the message ID other than KAQB11501-I is displayed in the part boxed with a thick frame, refer to Maintenance Tool "2.71.3 Command termination messages and action to be taken" (MNTT 02-3780).
Take appropriate action and perform step (3) and later again.

```
$ sudo tapetest /dev/100000e0022216cc/nst00
Mar 16 15:45:50 KAQB12258-Q Tape device operation will now be confirmed. Do you want to
continue? (y/n) y
Mar 16 15:45:50 KAQB11500-I tapetest command execution has started.
Mar 16 15:45:50 KAQB11501-I tapetest command has finished.
```

Figure 2.71.2-4 When the tapetest command is normally terminated

```
$ sudo tapetest /dev/100000e0022216cc/nst00
Mar 16 15:45:50 KAQB12258-Q Tape device operation will now be confirmed. Do you want to continue? (y/n) y
Mar 16 15:45:50 KAQB11500-I tapetest command execution has started.
Mar 16 15:45:50 KAQB12261-E Operation of the tape device failed to be confirmed. (st device access write error)
--Error detail--
RC              : 0x60
ERRNO           : -
PROCESS         : write
SENSE           :
0000: 70 00 06 00 00 00 00 0c 00 00 00 00 29 00 00 00  : p...........)...

MEMO  : command duration = 1
        opcode           = 0x01
        driver status    = 0x0008
        host status      = 0x0000
        msg status       = 0x0000
        status byte      = 0x02
```

Figure 2.71.2-5 When the tapetest command is abnormally terminated

(8) Request the system administrator to remove the tape from the tape drive for which the operation confirmation is completed.

(9) Repeat the procedure from (4) to (9) for the number of [Path]'s recorded in (3).

(10) Perform the procedure from (2) to (9) similarly for the other node.

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2.71.3 Command termination messages and action to be taken

When you execute the syslusave command, messages might be displayed. Table 2.71.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.71.3-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQB11500-I	tapetest command execution has started.	The tapetest command execution is started.	—
2	KAQB11501-I	tapetest command has finished.	The tapetest command is normally terminated.	—
3	KAQB11503-E	An option is incorrect.	An option is incorrect.	Specify a correct option and re-execute.
4	KAQB11506-E	The value of the <*parameter name*> parameter is incorrect.	The value of the parameter is incorrect.	Specify the correct parameter and execute the command again.
5	KAQB11512-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).
6	KAQB11513-E	There are too many or too few values in the <parameter name> parameter.	There are too many or too few values in the parameter.	Specify the correct parameter and execute the command again.
7	KAQB12258-Q	Tape device operation will now be confirmed. Do you want to continue? (y/n)	Do you want to check the operation of the tape device?	Input "y" to execute and input "n" to cancel.
8	KAQB12259-E	The device file (<*device name*>) does not exist.	The specified device name does not exist.	Specify a correct option and re-execute.
9	KAQB12260-E	The device file (<*device name*>) is not a tape drive device file.	The specified device name is not a device of the tape drive.	

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Table 2.71.3-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
10	KAQB12261-E	Operation of the tape device failed to be confirmed. (<*error information*>)	The operation check of the tape drive failed.	Execute the tapelist command and confirm that the FC connection is normal. For the tapelist command, refer to Maintenance Tool "2.37 Displaying the Information of Tape Devices (tapelist)"(MNTT 02-2170). If the tape information is not displayed, check the LED for which FC connection is performed. If no failure is detected by the check above, request the system administrator to check the tape device and to confirm that the tape device is not powered off, and execute. If an error occurs again, record the contents under [--Error detail--], collect the OS Logs, and transmit them with the recorded contents to the support center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).
11	KAQB12262-E	Tape is no tape in the tape drive.	No tape is stored in the tape drive.	Request the system administrator to store the tape in the tape drive and re-execute.
12	KAQB12263-E	The specified tape drive is connected to and in a status other than the unregistered status.	The specified tape drive is already connected and is not in the nonregistered status.	The [Path] whose [Status] is [D, D] must be specified by the tapelist command. Review from the procedure from (3) and re-execute.

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2.74 List of Virtual Servers (vnaslist)

This command lists the information related to all the Virtual Servers existing in the cluster.

NOTE: HDI does not support Virtual Server.

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2.75 Startup of Virtual Server (vnasstart)

This command specifies the Virtual Server name and starts up the Virtual Server.

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2.76 Stopping the Virtual Server (vnasstop)

This command specifies a Virtual Server name and stops the Virtual Server.

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2.77 Restart of Virtual Server (vnasrestart)

This command specifies a Virtual Server name and restarts the Virtual Server.

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2.78 Changing the Operation node of the Virtual Server (vnasmove)

This command executes the change of the operation node of the Virtual Server in the operation status. In addition, this command executes the change of the default startup node to a specified node.

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2.79 Displaying Network Setting Information (nasnetstat)

This command displays network information. The same type of information as the case the netstat command is executed is displayed.
By executing this command, it can be confirmed whether the network setting is correctly set in the OS of the node.

NOTE: This command can be executed if the OS version is only 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.79.1 Command line

This command uses the following command lines.

```
nasnetstat [-r|-g|-i|-s|-M] [-v] [-n] [--numeric-hosts]
[--numeric-ports] [--numeric-users]
[--protocol=address family[,address family...]]
[-c] [-e [-e]] [-o] [-p] [-l] [-a] [-F] [-C] [-4|-6]
```

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Table 2.79.1-1 shows the description of each option.

Table 2.79.1-1 Command Options

No.	Option	Description
1	-r	Displays routing table.
2	-g	Displays multicast groups membership information of the IPv4 and the IPv6.
3	-i	Displays information of all the network interfaces.
4	-s	Displays statistical information of each of the protocols.
5	-M	Displays masqueraded connection.
6	-v	Displays in the detail mode.
7	-n	Displays in numeric address instead of such name resolution as host name, port name, and user name.
8	--numeric-hosts	Displays host address in numbers. However, resolution of port name and user name is performed.
9	--numeric-ports	Displays in port number and numbers. However, resolution of host name and user name is performed.
10	--numeric-users	Displays the user ID in numbers. However, resolution of host name and port name is performed.
11	--protocol=address family[,address family]	Displays the connection status of the split address family. As an address family, keywords (inet, unix, ipx, ax25, netrom, ddp) are specified. Note that inet includes raw, udp, tcp protocols.
12	-c	Updates and displays specified information every second.
13	-e	Displays detailed information. If two units of this option are specified, more detailed information is displayed.
14	-o	The information of the networking timer is additionally displayed.
15	-p	Displays the name of the program to which each of the sockets belongs and the PID.
16	-l	Displays the sockets waiting to be connected only.
17	-a	Displays all the sockets in use regardless of the connection status.
18	-F	Displays routing information in FIB.
19	-C	Displays routing information existing in the routing cache.
20	-4	Adopts the IPv4 protocol. If this is specified at the same time as the -6 option, both of the options are valid. However, if the -r option is specified at the same time, the information is displayed for the specified number of times and in order of specification of the -4 and -6 options. If specification is omitted, both the IPv4 and the IPv6 are adopted, but the IPv4 is adopted if the -r option is specified.
21	-6	Adopts the IPv6 protocol. If this is specified at the same time as the -4 option, both of the options are valid. However, if the -r option is specified at the same time, the information is displayed for the specified number of times and in order of specification of the -4 and -6 options. If specification is omitted, both the IPv4 and the IPv6 are adopted, but the IPv4 is adopted if the -r option is specified.

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2.79.2 Output format

The output format in executing the nasnetstat command is the same type of output format in executing the netstat command. For the details of the output result, refer to “2.79.3 Execution procedure”.

2.79.3 Execution procedure

This subsection describes the procedure for executing the nasnetstat command.

(1) Log in to the node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) Figure 2.79.3-1 shows an execution example of the nasnetstat command in case “-i” is specified (listing network interfaces), and Figure 2.79.3-2 shows an execution example of the nasnetstat command in case “-r” is specified (listing routing tables).
If a message is displayed, take measures with reference to Maintenance Tool “2.79.4 Command termination messages and action to be taken” (MNTT 02-4240).
After completing the measures, retry the operation.

```
$ sudo nasnetstat -i
Kernel Interface table
Iface      MTU Met  RX-OK RX-ERR RX-DRP RX-OVR   TX-OK TX-ERR TX-DRP TX-OVR Flg
hb0       1500 0   641031      0    0 0       640790      0      0      0 BMRU
hb0-br    1500 0      273      0    0 0          271      0      0      0 BMRU
lo       16436 0   682061      0    0 0       682061      0      0      0 LRU
mng0      1500 0  1098867      0    0 0      1026564      0      0      0 BMPRU
mng0-br   1500 0  1098421      0    0 0      1026587      0      0      0 BMRU
pm0       1500 0        0      0    0 0           10      0      0      0 BMRU
```

Figure 2.79.3-1 Execution Example of the nasnetstat Command (listing network interfaces)

```
$ sudo nasnetstat -r
Kernel IP routing table
Destination    Gateway    Genmask          Flags  MSS Window    irtt Iface
10.0.1.0       *          255.255.255.224  U      0 0           0 hb0
10.0.1.0       *          255.255.255.0    U      0 0           0 hb0-br
10.197.181.0   *          255.255.255.0    U      0 0           0 pm0
192.168.0.0    *          255.255.0.0      U      0 0           0 mng0-br
```

Figure 2.79.3-2 Execution Example of the nasnetstat Command (listing routing tables)

NOTE: Refer to interface information with “-br” displayed after the interface name.

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2.79.4 Command termination messages and action to be taken

When you execute the nasnetstat command, messages might be displayed. Table 2.79.4-1 lists the action to be taken for each message ID.

Table 2.79.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	- *1	nasnetstat: invalid option – <*option*> *2	The parameter is not correct.	Specify a correct parameter and reexecute.
2	- *1	An internal error occurred. (failed in the lock. errno.)	An exclusive control error occurred.	Execute the eraselog command and reexecute. If the error occurs again, collect the OS log and send it to the Support Center. For details about the eraselog command, refer to Maintenance Tool "2.82 Deleting Logs Created in Executing Commands (eraselog)" (MNTT 02-4320). For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	- *1	(Other message)	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

*1: No message ID is displayed.
*2: The character specified as a parameter is displayed as the actual <*option*>.

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2.80 Displaying the Route to Reach a Specified Host (nastraceroute)

This command displays the route to reach a specified host. The same type of information as the case where the traceroute command is executed is displayed.

NOTE: This command can be executed if the OS version is only 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.80.1 Command line

This command uses the following command lines.

nastraceroute [-d] [-F] [-I] [-r] [-n]
[-g gateway[,gateway]…] [-i interface] [-f initial TTL]
[-m maximum TTL] [-p port number] [-q number of times of trial] [-s source address] [-t TOS]
[-w timeout time] host name [packet length]

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Table 2.80.1-1 shows the description of each option.

Table 2.80.1-1 Command Options

No.	Option	Description	Remarks
1	-4	Adopts the IPv4 protocol. If this is specified at the same time as the -6 option, the last specified option is adopted. If specification is omitted, the IPv4 is adopted.	—
2	-6	Adopts the IPv6 protocol. If this is specified at the same time as the -4 option, the last specified option is adopted. If specification is omitted, the IPv4 is adopted.	—
3	-d	Operates in debug mode.	—
4	-F	Prohibits split of IP packet.	—
5	-I	Uses ICMP Echo Request instead of UDP packet.	—
6	-r	Ignores routing table and directly transfers to host for which packet is specified.	—
7	-n	Inhibits output to IP address only, without name resolution.	—
8	-g gateway[,gateway]	Can specify up to eight gateways as the route.	—
9	-i interface	Executes by using specified interface (network card name).	—
10	-f initial TTL	Specifies the initial value of the TTL to be used. Displays the gateway from this number of hops.	—
11	-m maximum TTL	Specifies the maximum value of the TTL to be used. Displays the gateway until this number of hops.	—
12	-p port number	Specifies the port number of the UDP packet to be used.	—
13	-q number of times of trial	Specifies the number of times of trial for one gateway. It is tried three times by default.	—
14	-s source address	Executes from a specified IP address (Source Address).	—
15	-t TOS	Specifies the TOS (Type Of Service) of the packet.	—
16	-w timeout time	Specifies timeout time (unit: second). 5 seconds by default, 2 seconds at minimum and thirty seconds at maximum.	—
17	host name	Specifies the target host name or IP address.	In case IPv6 is specified, the IP address is displayed in a square bracket “[]”.
18	packet length	Specifies the packet size (unit: byte) to be used for route search.	—

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2.80.2 Output format

The output format in executing the nastraceroute command is the same as the output format of the traceroute command. For the details of the output format, refer to 2.80.3 “Execution procedure”.

2.80.3 Execution procedure

This subsection describes the procedure for executing the nastraceroute command.

(1) Log in to the node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) Specify the IP address to be the target of confirmation and execute the nastraceroute command.
The case where the communication route to the specified IP address is normally set is shown as in Figure 2.80.3-1, and the case an abnormality exists in the communication route is shown as in Figure 2.80.3-2.

```
$ sudo nastraceroute -4 -n 10.213.76.124
traceroute to 10.213.76.124 (10.213.76.124), 30 hops max, 40 byte packets
1 10.213.88.10 5.580 ms 5.588 ms 5.583 ms
2 158.214.125.10 7.478 ms 9.683 ms 11.154 ms
3 10.213.1.3 9.653 ms 9.667 ms 9.982 ms
4 10.213.76.124 9.547 ms 9.560 ms 9.557 ms
```

Figure 2.80.3-1 Execution Example of the nastraceroute Command (normal communication route)

The figure above indicates that communication is made with “10.213.76.124” by way of “10.213.88.10”, “158.214.125.20”, and “10.213.1.3”.

```
$ sudo nastraceroute -4 -n 10.10.10.10
traceroute to 10.10.10.10 (10.10.10.10), 30 hops max, 40 byte packets
1 10.213.88.10 5.496 ms 5.490 ms 5.486 ms
2 158.214.125.10 9.376 ms 9.403 ms 11.644 ms
3 10.213.1.65 7.238 ms 7.258 ms 7.253 ms
4 158.214.120.2 7.249 ms 9.324 ms 9.320 ms
5 133.145.201.2 13.583 ms 15.147 ms 17.309 ms
6 133.144.227.33 13.551 ms 11.658 ms 10.097 ms
7 * * *
8 * * *
...
29 * * *
30 * * *
```

Figure 2.80.3-2 Execution Example of the nastraceroute Command (abnormal communication route)

The figure above indicates that communication is performed before the gateway “133.144.227.33”, but that the subsequent communication cannot be performed. Since there may be something wrong with the router and other switch devices or the routing setting, review or change the setting.
If a message ID is displayed, refer to Maintenance Tool “2.80.4 Command termination messages and action to be taken” (MNTT 02-4280).
After completing the measures, retry the operation.

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2.80.4 Command termination messages and action to be taken

When you execute the nastraceroute command, messages might be displayed. Table 2.80.4-1 lists the action to be taken for each message ID.

Table 2.80.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	- *1	nastraceroute: invalid option –<*option*> *2	The parameter is not correct.	Specify a correct parameter and reexecute.
2	- *1	An internal error occurred. (failed in the lock. errno.)	An exclusive control error occurred.	Execute the eraselog command and reexecute. If the error occurs again, collect the OS log and send it to the Support Center. For details about the eraselog command, refer to Maintenance Tool "2.82 Deleting Logs Created in Executing Commands (eraselog)" (MNTT 02-4320). For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	- *1	(Other message)	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

*1: No message ID is displayed.
*2: The character specified as a parameter is displayed as the actual <*option*>.

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2.81 Displaying IP address-MAC address Correspondence (nasipneigh)

This command confirms the correspondence between the IP address and the MAC address in the specified protocol. The same type of information as the case the neigh option is specified by the ip command is displayed.

NOTE: This command can be executed if the OS version is only 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.81.1 Command line

This command uses the following command line.

nasipneigh [-4|-6]

Table 2.79.1-1 shows the description of each option.

Table 2.81.1-1 Command Options

No.	Option	Description	Remarks
1	-4	Adopts the IPv4 protocol. If this is specified at the same time as the -6 option, the last specified option is adopted. If specification is omitted, the IPv4 is adopted.	—
2	-6	Adopts the IPv6 protocol. If this is specified at the same time as the -4 option, the last specified option is adopted. If specification is omitted, the IPv4 is adopted.	—

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2.81.2 Output format

The output format in executing the nasipneigh command is the same as the output format in the case where the neigh option is specified for the ip command. For the details of the output format, refer to “2.81.3 Execution procedure”.

2.81.3 Execution procedure

This subsection describes the procedure for executing thenasipneigh command.

(1) Log in to the node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) Execute the nasipneigh command.
As shown in Figure 2.81.3-1, if the nasipneigh command is normally terminated, it indicates that the displayed IP addresses and the MAC addresses normally correspond to each other.
Such case as a part in a thick line shown in Fig. 2.81.3-2 is displayed indicates that the correspondence between the target IP address and the MAC address is not settled.
In case of IPv6, “INCOMPLETE” is displayed in the part boxed with a thick frame instead of “FAILED”.
If a message ID is displayed, refer to Maintenance Tool “2.81.4 Command termination messages and action to be taken” (MNTT 02-4310).
After completing the measures, retry the operation.

```
$ sudo nasipneigh -4
192.168.1.2 dev mng0-br lladdr 00:26:b9:36:93:7b REACHABLE
192.168.0.10 dev mng0-br lladdr 00:14:85:e9:a8:41 REACHABLE
10.0.1.25 dev hb0 lladdr 00:26:b9:36:93:73 REACHABLE
192.168.1.20 dev mng0-br lladdr 00:26:b9:36:93:77 REACHABLE
```

Figure 2.81.3-1 Execution Example of the nasipneigh Command (in normal condition)

```
$sudo nasipneigh -4
192.168.1.2 dev mng0-br lladdr 00:26:b9:36:93:7b REACHABLE
192.168.0.10 dev mng0-br lladdr 00:14:85:e9:a8:41 REACHABLE
10.0.1.25 dev hb0 lladdr 00:26:b9:36:93:73 REACHABLE
192.168.1.20 dev mng0-br FAILED
```

Figure 2.81.3-2 Execution Example of the nasipneigh Command (in failed condition)

NOTE: Refer to interface information with “-br” displayed after the interface name.

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2.81.4 Command termination messages and action to be taken

When you execute the nasipneigh command, messages might be displayed. Table 2.81.4-1 lists the action to be taken for each message ID.

Table 2.81.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	- *1	nasipneigh: invalid option – <*option*> *2	The parameter is not correct.	Specify a correct parameter and reexecute.
2	- *1	(Other message)	An internal error occurred.	Execute the eraselog command and reexecute. If the error occurs again, collect the OS log and send it to the Support Center. For details about the eraselog command, refer to Maintenance Tool "2.82 Deleting Logs Created in Executing Commands (eraselog)" (MNTT 02-4320). For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

*1: No message ID is displayed.
*2: The character specified as a parameter is displayed as the actual <*option*>.

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2.82 Deleting Logs Created in Executing Commands (eraselog)

This command deletes the dump files of the log files and packets created in the node at the time of executing the nasping command, the nasnetstat command or the nastraceroute command, and the nasipneigh command.

NOTE:
- This command can be executed if the OS version is only 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- Do not execute this command unless specifically instructed.

2.82.1 Command line

This command uses the following command line.

eraselog

2.82.2 Execution procedure

This subsection describes the procedure for executing the eraselog command.

(1) Log in to the node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the eraselog command as shown in Figure 2.82.2-1.
Note that this command is normally terminated without exception.

```
$ sudo eraselog
```

Figure 2.82.2-1 Execution Example of the eraselog Command

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2.83 Initializing User Disk (userdiskinit)

This command executes the user disk initialization in the single node configuration that is connected with the disk array subsystem. User disk initialization process is in released status by default.
The initialization process is executed at the time of OS reboot.

NOTE:
- Because this command initializes the user data, execute only when there is an instruction to do so from the vendor.
- This command can be executed only in the single node configuration that is connected with the disk array subsystem.
- This command can be executed with the OS version is 3.1.0-XX or later and 3.2.2-XX or earlier. To confirm the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS" (MNTT 02-2060).

2.83.1 Command line

This command uses the following command lines.

- To set the waiting status of the disk initialization process:
  userdiskinit –on
- To release the waiting status of the disk initialization process:
  userdiskinit --off
- To check the current waiting status of the disk initialization process:
  userdiskinit
- To display the command format to the standard output:
  userdiskinit -h

Table 2.83.1-1 Command Options

No.	Option	Description	Remarks
1	--on	Specify to set the status to be in the user disk initialization process waiting.	—
2	--off	Specify to release the status of the user disk initialization process waiting.	—
3	-h	Output the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.83.2 Execution procedure

This subsection describes the procedure for executing the userdiskinit command.

To execute the user disk initialization process, refer to the "(1) When executing the user disk initialization."

To display the waiting status of user disk initialization process, refer to Maintenance Tool "(2) When displaying the current waiting status of user disk initialization" (MNTT 02-4360).

(1) When executing the user disk initialization

NOTE: Do not execute this command unless specifically instructed.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) To change to the waiting status of user disk initialization process, execute userdiskinit command in accordance with the execution example of userdiskinit in Figure 2.83.2-1.
If it is changed to the waiting status of initialization process by mistake, release the initialization process status as shown in Figure 2.83.2-2 Execution example of the userdiskinit command.
When the message ID is shown, take measures with reference to Maintenance Tool "2.83.3 Command termination messages and action to be taken" (MNTT 02-4370).
After completing the measures, retry the operation.

```
$sudo userdiskinit --on
```

Figure 2.83.2-1 Execution Example of the userdiskinit Command (To change to the waiting status of the user disk initialization process)

```
$sudo userdiskinit --off
```

Figure 2.83.2-2 Execution Example of the userdiskinit Command (To release the waiting status of user disk initialization process)

(c) When changing to the waiting status of the user disk initialization process at the step (b), a confirmation message for the userdiskinit command execution (KAQM33045-Q) as shown in Figure 2.83.2-3 is displayed. Enter "y" to start execution. The status is changed to the waiting status of user disk initialization process.
When releasing the waiting status of user disk initialization process at the step (b), the waiting status of the initialization process is released without any error messages.
When a message ID is displayed, take measures with reference to Maintenance Tool "2.83.3 Command termination messages and action to be taken" (MNTT 02-4370).
After completing the measures, retry the operation.

```
$sudo userdiskinit –on
KAQM33045-Q Performing this operation will cause the user data to be initialized the
next time the node is restarted. Do you want to initialize the user disk? (y/n) y
```

Figure 2.83.2-3 Confirmation Message (KAQM33045-Q) for the userdiskinit command execution

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(d) Check the current setting status by using userdiskinit command.
For how to confirm the setting information by using the userdiskinit command, refer to Maintenance Tool "(2) When displaying the current waiting status of user disk initialization" (MNTT 02-4360).

(e) To enable the setting status, reboot the OS. For details about how to reboot the OS, refer to Maintenance Tool "2.29 Rebooting the OS of This Side Node (nasreboot)" (MNTT 02-1790).

(f) After completion of OS reboot, execute userdiskinit command, and then check if the status is "Off." If the status is still "On," the user disk initialization process might failed by a FC path failure. In this case, execute "C.2.2.2 Failure determination procedure at the single node configuration".

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(2) When displaying the current waiting status of user disk initialization
The output format for the userdiskinit command execution is shown in Figure 2.83.2-4 Output Format of the userdiskinit Command.

```
Output format of userdiskinit

[status]

*1: Values acquired from the system are displayed within [  ].
```

Figure 2.83.2-4 Output Format of the userdiskinit Command

Table 2.83.2-1 describes the details about the items in Figure 2.83.2-4 Output Format of the userdiskinit command.

Table 2.83.2-1 Description of the Items in the Output Format

No.	Option	Description	Remarks
1	[status]	Display the current setting information.	On: User disk initialization waiting status (the user disk is initialized at the next time OS startup.) Off: Not in the user disk initialization waiting status.

Execute the userdiskinit command according to the following procedure.

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) By executing the userdiskinit command, current setting information is displayed as shown in Figure 2.83.2-5.
If a message ID is displayed, refer to Maintenance Tool "2.83.3 Command termination messages and action to be taken" (MNTT 02-4370).
Perform a proper action and execute the command again.

```
$ sudo userdiskinit
On
```

Figure 2.83.2-5 Execution Example of the userdiskinit Command

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2.83.3 Command termination messages and action to be taken

When you execute the userdiskinit command, messages might be displayed. Table 2.83.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.83.3-1 Message IDs and Action to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
3	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
4	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
5	KAQM33008-E	A system error has occurred.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
6	KAQM33045-Q	Performing this operation will cause the user data to be initialized the next time the node is restarted. Do you want to initialize the user disk? (y/n)	When executing this command, the user data is initialized at the next time OS startup. Do you really want to initialize the user data?	To change to the waiting status of initialization process, enter “y”. To cancel the initialization process, enter “n”.

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2.84 Displaying the List of Routing Information (routelist)

This command displays the list of routing information for each network interface that is set in this side node.

NOTE:
- This command can be executed if the OS version is only 3.2.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- Do not execute this command unless specifically instructed.

2.84.1 Command line

This command uses the following command lines.

- To display the routing information of IPv4 and IPv6 addresses:
  routelist [-l] [--del delimiter | -c]

- To display the routing information of IPv4 address:
  routelist -p v4 [-l] [--del delimiter | -c]

- To display the routing information if IPv6 address:
  routelist -p v6 [-l] [--del delimiter | -c]

- To display the command format to the standard output:
  routelist -h

Table 2.84.1-1 shows the description of each option.

Table 2.84.1-1 Command options

No.	Option	Description	Remarks
1	-p v4	Specifies to display the IPv4 interface information.	—
2	-p v6	Specifies to display the IPv6 interface information.	—
3	--del <*delimiter*>	Displays the information with delimiter. Output as it is even if there is an IPv6 address.	—
4	-l	Displays the enabled routing information.	Displays also the routing information created automatically by the OS.
5	-c	Outputs with the colon delimiter. If there is an IPv6 address, it is output with the delimiter of [].	—
6	-h	Outputs the command format to the standard output.	KAQM14136-I is displayed at the time of executing.

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2.84.2 Output format

The output format for the routelist command execution is shown in Figure 2.84.2-1.

```
Output format of routelist

[IPv4]
Target        Netmask       Gateway       Method    Type     MSS     Iface
[target1]     [netmask1]    [gateway1]    [method1] [type1]  [mss1]  [iface1]
[IPv6]
Target              Gateway             Method    Type    Iface
[v6target1]           [v6gateway1]          [method1] [type1] [iface1]

Output format of routelist –l

[IPv4]
Target        Netmask       Gateway       Flags     MSS     Iface
[target1]     [netmask1]    [gateway1]    [flag1]   [mss1]  [iface1]
[IPv6]
Target              Gateway             Flags     Iface
[v6target1]           [v6gateway1]          [v6flag1] [iface1]

*1: Values acquired from the system are displayed within [  ].
*2: The routing information is displayed on a single line on an interface basis.
```

Figure 2.84.2-1 Output Format of the routelist Command

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Table 2.84.2-1 describes the details about the items in Figure 2.84.2-1 Output format of the routelist Command.

Table 2.84.2-1 Description of the Items in the Output Format

No.	Option	Description	Remarks
Display contents of IPv4			
1	[IPv4]	The heading of IPv4 routing. This is displayed when there is IPv4 routing information.	—
2	[target1]	Displays the target of the [iface1] routing. Display the target IP address, the host name or the network name.	—
3	[netmask1]	Displays the netmask of the [iface1] routing.	—
4	[gateway1]	Displays the gateway by way of [iface1]. Displays the IP address or the host name of the gateway.	—
5	[method1]	Displays when “-l” option is not specified. Displays if the [iface1] routing is allowed or rejected. "Allow": Displays when the route is enabled. "Reject": Displays when the route is rejected.	—
6	[type1]	Displays when “-l” option is not specified. Displays how to specify the target of [iface1] routing. "net": Displays when the target routing is added by specifying "net." "host": Displays when the target routing is added by specifying "host." "default": Displays when the target routing is added by specifying "default."	—
7	[flag1]	Displays when “-l” option is specified. A: [specified by addrconf] C: [specified for cache entry] D: [dynamic specification by the daemon or the replacement] G: [gateway is specified] H: [the host is the target] M: [changed by the route control daemon or the replacement] R: [dynamic route to be restored] U: [the route is allowed] !: [the route is rejected]	—
8	[mss1]	Displays the maximum segment size of the TCP connection at [iface1] route. If the target routing is the rejected route, or the MSS is by default, ”-” is displayed.	—
9	[iface1]	Displays the name of interface to be used at the target routing.	—
Display contents of IPv6			
10	[IPv6]	The heading of IPv6 routing. This is displayed when there is IPv6 routing information.	—
11	[v6target1]	Display the target address prefix (format of connecting the IPv6 address and prefix length with “/”) of the [iface1] routing. Example) ffcc::0/64 The default gateway is shown as “default.”	“[]”of the IPv6 address specified at the setting is removed when displaying.
12	[v6gateway1]	Displays the gateway by way of [iface1]. Displays the IPv6 address of the gateway. If it is omitted at the time when setting the routing, “-” is displayed.	
13	[method1]	This is the same as the item 5.	—
14	[type1]	This is the same as the item 6.	—
15	[v6flag1]	Displays one of U, I, G, and H in the item 7.	—
16	[iface1]	This is the same as the item 9.	—

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2.84.3 Execution procedure

This subsection describes the procedure for executing the routelist command.

(1) Log in to the execution node via ssh from the maintenance PC. For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.84.3-1 shows an example of executing the routelist command.
When the message ID is shown, take measures with reference to Maintenance Tool "2.84.4 Command termination messages and action to be taken" (MNTT 02-4420).
After completing the measures, retry the operation.

```
$ sudo mngroutelist -l
[IPv4]
Target          Netmask          Gateway        Flags   MSS   Iface
10.200.100.0    255.255.255.0    10.200.100.1   UH       -    eth12
10.200.200.0    255.255.255.255  10.200.200.1   UG       -    eth13
192.168.0.0     255.255.255.0     0.0.0.0        U       -    mng0
default         0.0.0.0          10.200.100.1   UG       -    eth14

[IPv6]
Target                  Gateway          Flags  Iface
::1/128                 ::               Un     lo
fd00::7:f010/128        ::               Un     lo
fd00:2::/64             fd00::2          UH     eth12
default                 ::               !n     lo
```

Figure 2.84.3-1 Execution Example of the routelist Command

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2.84.4 Command termination messages and action to be taken

A message may be displayed when the routelist command is executed. Action to be taken against messages are described in Table 2.84.4-1 Message IDs and Actions to be Taken.

Table 2.84.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
3	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
5	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
6	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM05010-E	An internal error occurred.	An internal error occurred.	
8	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	

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2.85 Deleting the Routing Information (routedel)

This command deletes the routing information of each network interface.

NOTE:
- This command can be executed if the OS version is 3.2.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- Do not execute this command unless specifically instructed.

2.85.1 Command line

This command uses the following command line.

- To specify the target of the routing to be deleted in IP address (IPv4 address)
  routedel [-p v4] -d net-address -n netmask [-g gateway] [-f] [-V] [--nochk] interface

- To specify the target of the routing to be deleted in host name or IP address (IPv4 address)
  routedel [-p v4] -d host-address [-g gateway] [-f] [-V] [--nochk] interface

- To specify the target of the routing to be deleted in default route (IPv4 address)
  routedel [-p v4] -d default [-g gateway] [-f] [-V] [--nochk] interface

- To delete all of the routing except the management port (IPv4 address)
  routedel [-p v4] --all [-f] [-V]

- To specify the target of the routing to be deleted in IP address (IPv6 address) (3.2.0-XX)
  routedel -p v6 -d net-address -n netmask [-g gateway] [-f] [-V] [--nochk] interface

- To specify the target of the routing to be deleted in host name or IP address (IPv6 address) (3.2.0-XX)
  routedel -p v6 -d host-address [-g gateway] [-f] [-V] [--nochk] interface

- To specify the target of the routing to be deleted in default route (IPv6 address) (3.2.0-XX)
  routedel -p v6 -d default [-g gateway] [-f] [-V] [--nochk] interface

- To delete all of the routing except the management port (IPv6 address) (3.2.0-XX)
  routedel -p v6 --all [-f] [-V]

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- To specify the target of the routing to be deleted in IP address (IPv6 address) (3.2.1-XX or later)
  routedel [-p v6] -d net-address -n netmask [-g gateway] [-f] [-V] [--nochk] interface

- To specify the target of the routing to be deleted in host name or IP address (IPv6 address) (3.2.1-XX or later)
  routedel [-p v6] -d host-address [-g gateway] [-f] [-V] [--nochk] interface

- To specify the target of the routing to be deleted in default route (IPv6 address) (3.2.1-XX or later)
  routedel [-p v6] -d default [-g gateway] [-f] [-V] [--nochk] interface

- To delete all of the routing except the management port (IPv6 address) (3.2.1-XX or later)
  routedel [-p v6] --all [-f] [-V]

- To display the command format to the standard output:
  routedel -h

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Table 2.85.1-1 shows the description of each option.

Table 2.85.1-1 Description of options

No.	Option	Description	Remarks
1	-p v4	Specifies in the case of deleting the IPv4 routing. This option can be omitted.	—
2	-p v6	Specifies in the case of deleting the IPv6 routing.	This option must be specified in case IPv6 is set when the OS version is 3.2.0-XX or earlier. This option can be omitted when the OS version is 3.2.1-XX or later.
3	-d { net-address |host-address|default}	Specifies the target of the routing to be deleted. When specifying IPv6 format, put the IP address in brackets "[]."	Specify any of the following: net-address: Specifies by IP address. host-address: Specifies by IP address or a host name. default: Specify this to delete the default route. IPv6 setting example [2001:c03:1022:1::1] If the gateway is set, the option shown in the item number 5 in this list is mandatory.
4	-n <*netmask*>	Specifies the netmask (prefix length if the IPv6 is specified) of the routing to be deleted. This option is required only when "net" is selected for the "-t" option to add more routing information. The prefix length, if [Target] of the routing list shows "cd00:111::1/64", it is "64" after the "/".	Check if the routing to be deleted is "net" with reference to "Maintenance Tool '2.84 Displaying the List of Routing Information (mngroutelist)' (MNTT 02-4380)."
5	-g <*gateway*>	Specifies the gateway of the routing to be deleted. If the gateway is set, specification is required. When specifying IPv6 format, put the IP address in brackets "[]."	—
6	-f	Specifies this to inhibit the output of the confirmation message.	—
7	-V	Outputs a progress message.	—
8	--nochk	Specifies this to execute the delete processing even if the interfaces file does not contain the routing to be deleted.	—
9	*interface*	Specifies the interface name of the routing to be deleted.	Specify any of the following: •Specifying port name <port name> •Specifying VLAN port <port name>.<VLAN ID>
10	--all	Specifies this to delete all the routing except Management port. If an error occurs in the way of deleting process, the processing continues by outputting an alert message.	—
11	-h	Display the command format to the standard output.	At the time of output, KAQM14136-I is displayed.

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2.85.2 Execution procedure

This subsection describes the procedure for executing the routedel command.
Here explains when specifying the destination of the routing to be deleted with an IP address.

(1) Log in to the execution node via ssh from the maintenance PC. For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the routelist command to check that there is routing information to be deleted.
For details about the routelist command, refer to Maintenance Tool "2.84 Displaying the List of Routing Information (routelist)" (MNTT 02-4380).

```
$ sudo mngroutelist -l
[IPv4]
Target          Netmask         Gateway         Flags   MSS   Iface
192.168.20.0    255.255.255.0   192.168.10.1    UH      -     eth12
10.200.200.0    255.255.255.255 10.200.200.1    UG      -     eth13
192.168.0.0     255.255.255.0   0.0.0.0         U       -     mng0
default         0.0.0.0         10.200.100.1    UG      -     eth14

[IPv6]
Target                  Gateway         Flags   Iface
::1/128                 ::              Un      lo
fd00::7:f010/128        ::              Un      lo
2001:2c9:418:101::1/64  fd00::4         UH      eth12
default                 ::              !n      lo
```

Figure 2.85.2-1 Execution Example of the routelist command

(3) Write down the routing information to be deleted.
Here explains an example to delete the routing information of thick red frame in the Figure 2.85.2-1.

(4) For deleting the routing information in the IPv4 format, enter the information written down in the step (3) as command options and execute the routedel command in accordance with Figure 2.85.2-2 "Execution Example of routedel command (IPv4 format)."
For deleting the routing information in the IPv6 format, enter the information written down in the step (3) as command options and execute the routedel command in accordance with Figure 2.85.2-3 "Execution Example of routedel command (IPv6 format)." However, when the OS version is 3.2.1-XX or later, "-p v6" option can be omitted. For the confirmation of the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
When a message ID other than "KAQM05099-Q" or "KAQM05100-Q" is displayed, refer to Maintenance Tool "2.85.3 Command termination messages and action to be taken" (MNTT 02-4470).

```
$ sudo routedel -d 192.168.20.0 -n 255.255.255.0 -g 192.168.10.1 eth12
```

Figure 2.85.2-2 Execution Example of the routedel Command (IPv4 format)

```
$ sudo routedel –p v6 -d [2001:2c9:418:11::1] -r 64 -g [fd00::4] eth12
```

Figure 2.85.2-3 Execution Example of the routedel Command (IPv6 format)

NOTE: Be careful not to delete different routing information by mistake.

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(5) When the step (4) is executed, a confirmation message is displayed as shown in Figure 2.85.2-4 "Confirmation Message (KAQM05099-Q) for the routedel Command Execution." Enter "y" to start execution. The routing deletion processing starts.
To cancel the execution, enter "n."
The same message is displayed both in the case of IPv4 and Ipv6.
When a message ID is displayed after entering "y", refer to Maintenance Tool "2.85.3 Command termination messages and action to be taken" (MNTT 02-4470).
However, if "KAQM05209-W" or "KAQM05210-W" is displayed, the deletion of the routing information in this side node is complete, but failed in the other side node. Therefore, execute the routing information deletion in the other side node after executing the step (6).
The above messages are displayed even if the routing information is deleted already and there is no routing information in the other side node. In this case, consider that the operation has been successfully completed.
If the other than above message IDs is displayed, retry the operation from the step (2) after taking measures for the messages.

```
$ sudo routedel -d 192.168.20.0 -n 255.255.255.0 -g 192.168.10.1 eth12
KAQM05099-Q Do you want to delete the specified routing information? (y/n) y
```

Figure 2.85.2-4 Confirmation Message (KAQM050099-Q) for the routedel Command Execution

(6) After completion of the deletion, execute the routelist command to check that the specified routing information is deleted.
For details about the routelist command, refer to Maintenance Tool "2.84 Displaying the List of Routing Information (routelist)" (MNTT 02-4380).

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2.85.3 Command termination messages and action to be taken

A message may be displayed when the routedel command is executed. Actions to be taken against messages are described in Table 2.85.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.85.3-1 Message IDs and Actions to be Taken (1/3)

No.	Message ID	Message	Description	Action
1	KAQM05001-E	A syntax error exists in the entered <*item name*>.	The entered content for the target or gateway is invalid.	Specify the IP address format and execute the command again.
2	KAQM05002-E	A syntax error exists in the entered <*item name*>.	The entered content is invalid.	The displayed content is wrong. Enter the correct content and execute the command again.
3	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM05018-E	The specified host name (<*host name*>) cannot be resolved.	The specified host name cannot be resolved.	Specify a different host name or an IP address that can be resolve the name, and then retry the operation.
5	KAQM05029-E	An attempt to set routing information failed.	Failed to set the routing information.	Check the entered data. Re-enter the correct data and execute the command again. If the error occurs again, collect the OS log. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM05032-E	The entry for the VLAN ID is invalid.	The value of the input VLAN ID is incorrect.	Check the input data. Re-enter the value, and then retry the operation.
7	KAQM05038-E	The specified interface does not exist. (interface=<*interface*>)	There is no specified interface.	Check the interface to be deleted and specify it again, and then execute the command again.
8	KAQM05042-E	The interface specification is invalid.	The specified value is incorrect.	
9	KAQM05055-E	An attempt to read the file to be used for the requested processing has failed.	Failed to read the file to be used for the requested processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM05056-E	An attempt to write to the file to be used for the requested processing has failed.	Failed to write the file to be used for the requested processing.	
11	KAQM05095-E	The specified routing entry does not exist.	The specified routing settings do not exist.	Check the current routing information with the routelist command and specify the valid routing information. For details about the routelist command, refer to Maintenance Tool "2.84 Displaying the List of Routing Information (routelist)" (MNTT 02-4380).

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Table 2.85.3-1 Message IDs and Actions to be Taken (2/3)

No.	Message ID	Message	Description	Action
12	KAQM05099-Q	Do you want to delete the specified routing information? (y/n)	Executing this operation deletes the specified routing information. Do you want to delete the routing information?	To delete the routing information, enter “y”. Otherwise, enter “n.”
13	KAQM05100-Q	Do you want to delete all routing information? (y/n)	Executing this operation deletes all the routing information except the management port. Do you want to delete the routing information?	
14	KAQM05101-I	The routing information (<*routing-information*>) was deleted.	The routing information was deleted.	—
15	KAQM05103-E	An attempt to delete the routing information (<*routing-information*>) has failed, because the host name (<*host-name*>) could not be resolved.	The specified routing information contains the host name that cannot be resolved.	Request the system administrator to review the setting so that the host name can be resolved, and then retry the operation.
16	KAQM05104-E	An attempt to delete the routing information has failed. (routing information = <*routing-information*>).	Failed to delete the routing information. (Failed routing information)	Request the system administrator to check the routing information to be deleted.
17	KAQM05106-E	Routing information cannot be deleted because no netmask is specified.	Netmask is not specified.	Specify the netmask and then retry the operation.
18	KAQM05114-E	The interface of the heartbeat port or an internally-used port cannot be specified. (interface = <*interface*>)	The interface of the heartbeat LAN port or an internally-used port cannot be specified.	Specify the interface of the data LAN port or the management LAN port.
19	KAQM05115-E	The format of the specified IP address is invalid. (IP address=<*IP address*>)	The format of the specified IP address is invalid.	Use the correct IP address format.
20	KAQM05116-E	The format of the specified host name or IP address is invalid. (host name or IP address=<*host name or IP address*>)	The format of the specified host name or IP address is invalid.	Use alphanumeric characters, period (.), and hyphen (-) (the first must be an alphabet and the last must be an alphanumeric character) or the IP address format.
21	KAQM05209-W	Deletion of the routing information ended normally on the processing node, but failed on the other node. (routing information = <*routing information*>)	Deletion of the routing information ended normally on the processing node, but failed on the other side node. (When "--all" option is specified.)	Request the system administrator to check if the LAN cable is connected, if the lord of the node in the cluster returns to the normal state, if the OS is running in the other side node in the cluster. If there is unnecessary routing information in the other side node in the cluster, retry the operation in that node.
22	KAQM05210-W	Deletion of the routing information ended normally on the processing node, but failed on the other node.	Deletion of the routing information ended normally on the processing node, but failed on the other side node in the cluster. (When "--all" option is not specified.)	

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Table 2.85.3-1 Message IDs and Actions to be Taken (3/3)

No.	Message ID	Message	Description	Action
23	KAQM05211-E	The protocol version of the specified IP addresses and netmask (prefix length) do not match.	The protocol version of the specified IP address or netmask (prefix length) is not unified.	Check the specified data and unify the protocol version of the data.
24	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource to be used in the required processing is used by another user.	Execute the command again after waiting for a while. If the error occurs again, collect the OS Log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
25	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
26	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify a correct parameter, and execute the command again.
27	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	In case of the cluster configuration, ask the system administrator for the cluster construction. In case of the single node configuration, set the management IP address. Then, execute this command again. If the OS version is 3.2.3-XX or earlier, a message "Management IP address is not set" is not output.
28	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
29	KAQM14136-I	Usage: command-syntax	Displaying the command format.	—
30	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
31	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
32	KAQM14174-E	The specified IP address cannot be set. (specified value = <*specified value*>)	The specified IP address is a special address that cannot be set.	Confirm the specified value and execute again.

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2.86 Displaying Relearn Schedule of Cache Backup Module and Setting Status (enabled/disabled) of Schedule Execution (bburelearnget)

This command displays the relearn schedule of cache backup module and the setting status (enabled/disabled) of schedule execution.

NOTE:
- This command can be executed if the OS version is 3.0.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- Do not execute the setting by this command unless specifically instructed.
- This command can be executed only in the single node configuration that is not connected with the disk array subsystem.
- When the target model is CR220KK, read "Cache Backup Module" as "Internal RAID battery."

2.86.1 Command line

This command uses the following command lines.

- To display the relearn schedule of cache backup module and the setting status (enabled/disabled) of schedule execution

  bburelearnget

- To display the command format to the standard output:

  bburelearnget -h

Table 2.86.1-1 shows the description of each option.

Table 2.86.1-1 Description of options

No.	Option	Description	Remarks
1	-h	Display the command format to the standard output.	—

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2.86.2 Output format

The output format for the bburelearnget command execution is shown in Figure 2.86.2-1.

```
Output format of bburelearnget
Schedule settings for BBU relearn
Status              : [schedule setting status]
Day of the month : [date]
Time                : [time]
```

Figure 2.86.2-1 Output Format of the bburelearnget Command

Table 2.86.2-1 describes the details about the items in Figure 2.86.2-1 Output format of the bburelearnget Command.

Table 2.86.2-1 Description of the Items in the Output Format

No.	Option	Description
1	[schedule setting status]	Displays the setting status (enabled/disabled) of schedule execution. Schedule execution is enabled: Enable Schedule execution is disabled: Disable (*: The status in this place is same meaning as "Auto-Learn Mode: [set value]" displayed by bbuautolearnget command(refer to Maintenance Tool "2.68 Displaying the Set Value for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnget)" (MNTT 02-3650).)
2	[date]	Displays the date relearn to be executed with a number 1-31.
3	[time]	Displays the time relearn to be executed in hh:mm format.

2.86.3 Execution procedure

This subsection describes the procedure for displaying the relearn schedule of cache backup module and the setting status (enabled/disabled) of schedule execution by executing the bburelearnget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Figure 2.86.3-1 shows an example of executing the bburelearnget command.
When the message ID is shown, take measures with reference to Maintenance Tool "2.86.4 Command termination messages and action to be taken" (MNTT 02-4520).

```
$sudo bburelearnget
Schedule settings for BBU relearn
Status          : Enable
Day of the month : 1
Time            : 00:00
$
```

Figure 2.86.3-1 Execution Example of the bburelearnget Command

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2.86.4 Command termination messages and action to be taken

A message may be displayed when the bburelearnget command is executed. Actions to be taken against messages are described in Table 2.86.4-1 Message IDs and Actions to be Taken.

Table 2.86.4-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
4	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
5	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
6	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM38038-E	An attempt to read a system file has failed.	An attempt to read a system file has failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.87 Setting Relearn Schedule of Cache Backup Module and Enabling/disabling Schedule Execution (bburelearnset)

This command sets the relearn schedule of cache backup module and enables/disables the schedule execution.

NOTE:
- This command can be executed if the OS version is 3.0.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- Do not execute the setting by this command unless specifically instructed.
- This command can be executed only in the single node configuration that is not connected with the disk array subsystem.
- When the target model is CR220KK, read "Cache Backup Module" as "Internal RAID battery."

The execution cycle of the relearn schedule of cache backup module is once a month. The execution cycle cannot be changed. The execution time can be specified in hours and cannot be specified in minutes. Relearn schedule is executed at 0 minute of the specified hour.

Schedule information you set remains even when it is disabled, and when you enable the execution schedule again, relearn is executed on the schedule previously set. Schedule execution setting is possible even when it is disabled, but KAQW38037-W is output and the schedule execution is not enabled.

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2.87.1 Command line

This command uses the following command lines.

- To set the relearn schedule of cache backup module
  bburelearnset -S DD-hh

- To enable the relearn schedule execution of cache backup module
  bburelearnset --enable [-S DD-hh]

- To disable the relearn schedule execution of cache backup module
  bburelearnset --disable

- To display the command format to the standard output:
  bburelearnset -h

Table 2.87.1-1 shows the description of each option.

Table 2.87.1-1 Description of options

No.	Option	Description	Remarks
1	-S *DD-hh*	Sets the relearn schedule of cache backup module Specify the schedule in the following format. [DD]-[hh] [DD] Specify the date to execute relearn. [hh] Specify the time to execute relearn.	If you specify 29, 30, or 31 for [DD], the schedule is executed only in the month the day exists. Specify a two-digit number (1 to 31.) Default : 1 Specifying a two-digit number (0 to 23) for [hh.] Default : 0
2	--enable	Enable the relearn schedule execution of cache backup module.	You can also set a schedule at the same time by specifying –S option. When –S option is not specified, the previous setting (if there is no setting, default value) is inherited. Default of schedule execution : Enable This option is same as “bbuautolearnset --on”. (Refer to Maintenance Tool “2.67 Setting for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnset)” (MNTT 02-3620).)
3	--disable	Disable the relearn schedule execution of cache backup module.	This option is same as “bbuautolearnset --off”. (Refer to Maintenance Tool “2.67 Setting for Automatically Relearn Performing of the Internal RAID Battery (bbuautolearnset)” (MNTT 02-3620).)
4	-h	Display the command format to the standard output.	—

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2.87.2 Execution procedure

This subsection describes the procedure for setting the relearn schedule of cache backup module by executing the bburelearnset command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Confirm the setting status of the relearn schedule of cache backup module by executing the bburelearnget command. Figure 2.87.2-1 is a display example when the schedule is disabled.
For the bburelearnget command, refer to Maintenance Tool "2.86 Displaying Relearn Schedule of Cache Backup Module and Setting Status (enabled/disabled) of Schedule Execution (bburelearnget)" (MNTT 02-4500).

```
$sudo bburelearnget
Schedule settings for BBU relearn
Status          : Disable
Day of the month : 1
Time            : 00:00
$
```

Figure 2.87.2-1 Execution Example of the bburelearnget Command (1)

(3) Enable the relearn schedule by executing the bburelearnset command.
When a message ID is shown, take measures with reference to Maintenance Tool "2.87.3 Command termination messages and action to be taken" (MNTT 02-4560).

```
$sudo bburelearnset --enable
$
```

Figure 2.87.2-2 Execution Example of the bburelearnset Command (1)

(4) Change the relearn schedule to be executed at 12 o'clock on 25th of every month by executing the bburelearnset command.
When a message ID is shown, take measures with reference to Maintenance Tool "2.87.3 Command termination messages and action to be taken" (MNTT 02-4560).

```
$ sudo bburelearnset -S 25-12
$
```

Figure 2.87.2-3 Execution Example of the bburelearnset Command (2)

(5) Confirm the settings of the relearn schedule by executing the bburelearnget command.
For the bburelearnget command, refer to Maintenance Tool "2.86 Displaying Relearn Schedule of Cache Backup Module and Setting Status (enabled/disabled) of Schedule Execution (bburelearnget)" (MNTT 02-4500).

```
$sudo bburelearnget
Schedule settings for BBU relearn
Status          : Enable
Day of the month : 25
Time            : 12:00
$
```

Figure 2.87.2-4 Execution Example of the bburelearnget Command (2)

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2.87.3 Command termination messages and action to be taken

A message may be displayed when the bburelearnset command is executed. Actions to be taken against messages are described in Table 2.87.3-1 Message IDs and Actions to be Taken.

Table 2.87.3-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
3	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	A syntax error exists in the parameter (*<parameter>*).	Specify the correct parameter and execute the command again.
4	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—
5	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.
6	KAQM14178-E	This operation cannot be performed on the configuration.	This operation cannot be performed in the current configuration.	—
7	KAQM38003-E	An unexpected error occurred.	An unexpected error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300)
8	KAQM38036-E	The contents of the specified schedule are invalid.	The contents of the specified schedule are invalid.	Confirm the specified value and execute again.

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Table 2.87.3-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
9	KAQM38037-W	Schedule settings were processed successfully, but relearn is disabled.	Schedule settings were processed successfully, but relearn is disabled.	Enable the relearn schedule of BBU or Super capacitor. For how to enable, refer to Maintenance Tool "2.87 Setting Relearn Schedule of Cache Backup Module and Enabling/disabling Schedule Execution (bburelearnset)" (MNTT 02-4530).
10	KAQM38038-E	An attempt to read a system file has failed.	An attempt to read a system file has failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
11	KAQM38039-E	An attempt to write a system file has failed.	An attempt to write a system file has failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.88 Creating Volume Group (vgrcreate)

This command creates volume groups.

NOTE:
- Do not execute this command before completing the definition of a single node configuration.
- It is required that the status of the resource group is “online.”

When you execute the command without specifying “*volume-group-name*” on creating two or more volume groups, single error on creating a volume group will not result in an abortion of the process; creating the rest of the volume groups will be continued. However, each time an error occurs, messages indicating the failed volume group name and indicating the details are output.

When you execute the command without specifying “*volume-group-name*” and with specifying a LU which meets either of the following conditions, a warning message is output and the creation using the LU will be skipped. If all LUs are skipped, an error message (KAQM04251-E) is output.

- The LU is already assigned to a volume group
- A volume group which corresponds to the frame, drive type, and DP pool already exists.

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2.88.1 Command line

This command uses the following command lines.

- To create a volume group
  vgrcreate [-y] [*volume-group-name*] *LU*[,*LU*...]

- To display the command format to the standard output:
  vgrcreate -h

Table 2.88.1-1 shows the description of each option.

Table 2.88.1-1 Description of options

No.	Option	Description	Remarks
1	-y	Specify this option to suppress the output of confirmation response messages.	—
2	*volume-group-name*	Specify a volume group name to be created. The volume group name must start with “vg”, and to be specified in alphanumeric characters and underscores (_) within 16 characters.	If this option is omitted, a volume group that corresponds to the frame, drive type, and DP pool of the specified LU will be created.
3	LU[,*LU*...]	Specify a LU name to be assigned to the volume group in the format “luXX” (XX: a hexadecimal number from 00 to FF.) LU names are case-insensitive. Note that it is not possible to specify a V-VOL of Copy-on-Write Snapshot. Although two or more LUs can be specified, it is not possible to specify LUs on different frames when specifying a volume group. To specify two or more LUs, separate the LU names by a comma (“,”) as in the format “luXX,luXX”.	If two or more LUs are specified, an error occurs in the following cases. ・Same LUs are specified ・More than 256 LUs are specified ・Specified LU name starts/ends with “,”.
4	-h	Display the command format to the standard output.	—

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2.88.2 Execution procedure

This subsection describes the procedure for creating a volume group using LUs with different drive types by executing the vgrcreate command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Confirm the setting status of volume groups by executing the vgrlist command.
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

```
$ sudo vgrlist --list
List of volume groups:
The number of volume groups(1)
 Volume group        : vg0
 Total size(GB)      : 27939
 Free size(GB)       : 27939
 LU status           : normal
 LUs                 : lu00(FC/SAS)
 Model               : INTERNAL
 Serial number       : -
 Auto assign         : enable

$
```

Figure 2.88.2-1 Execution Example of the vgrlist Command (1)

(3) Confirm the LU numbers to be added by executing the lumaplist command and write down them. For details, refer to Maintenance Tool "2.65 User LU Mapping Display (lumaplist)" (MNTT 02-3470).

```
$ sudo lumaplist -v
LUN  Target   Model     serial   LDEV(  hex)  type    size used function   RG DP  Used page  Pool   Free pool  Total pool
00     -      INTERNAL    -       - (    -)   FC/SAS   27940.000GB VG:vg0   1  -     -     -          -          -
01   N0-T000  AMS      85011261   0(  0000)  FC/SAS   10.000GB    Free     2  -     -     -          -          -
02   N0-T001  AMS      85011262   1(  0001)  SATA     10.000GB    Free     2  -     -     -          -          -
$
```

Figure 2.88.2-2 Execution Example of the lumaplist Command

(4) Create a new volume group with specifying the LU numbers noted in step (3.) Figure 2.88.2-3 shows an execution example of the vgrcreate command.
If drive types of the specified LUs are different, or the specified LUs are on different pools, KAQM04227-Q message will be output. Enter "y" to create a volume group.
KAQM04227-Q message will not be output if LUs with same drive types and pools are specified.
If other message ID is output, refer to Maintenance Tool "2.88.3 Command termination messages and action to be taken" (MNTT 02-4610).

```
$ sudo vgrcreate vg1 lu01,lu02
KAQM04227-Q LUs with different drive types or pools are mixed together. If you perform
this operation, automatic assignment processing will not be performed on the specified
volume group. Are you sure you want to perform this operation? (y/n) y
$
```

Figure 2.88.2-3 Execution Example of the vgrcreate Command (KAQM04227-Q)

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(5) Execute the vgrlist command to confirm that a new volume group has been created.
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).
In the execution example below, the status of "Auto assign" is "disable" because LUs with different drive types are specified for creating a volume group.

```
$ sudo vgrlist
List of volume groups:
The number of volume groups(1)
 Volume group          : vg0
 Total size(GB)        : 27939
 Free size(GB)         : 27939
 LU status             : normal
 LUs                   : lu00(FC/SAS)
 Model                 : INTERNAL
 Serial number         : -
 Auto assign           : enable

The number of volume groups(2)
 Volume group          : vg1
 Total size(GB)        : 20
 Free size(GB)         : 19
 LU status             : normal
 LUs                   : lu01(FC/SAS) lu02(SATA)
 Model                 : AMS
 Serial number         : 85011261,
 Auto assign           : disable

$
```

Figure 2.88.2-4 Execution Example of the vgrlist Command (2)

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2.88.3 Command termination messages and action to be taken

A message may be displayed when the vgrcreate command is executed. Actions to be taken against messages are described in Table 2.88.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.88.3-1 Message IDs and Actions to be Taken (1/5)

No.	Message ID	Message	Description	Action
1	KAQM04022-E	An attempt to connect to a device file has failed.	An attempt to connect to a device file has failed.	Execute the fpstatus command to check the connection status of the specified device file, and then execute the vgrcreate command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM04023-E	Information acquisition of a device file failed because of an unexpected error in internal processing.	Information acquisition of a device file failed because of an unexpected error in internal processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM04024-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to access the cluster management LU or the system file has failed.	
4	KAQM04025-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to acquire the device file information from the cluster management LU or the system file has failed.	
5	KAQM04026-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to update the device file information of the cluster management LU or the system file has failed.	
6	KAQM04031-E	A conflict with another system administrator's operation or an internal error may have occurred.	A conflict with another system administrator's operation or a system error may have occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM04034-E	Resource group or virtual server information could not be acquired.	Resource group or virtual server information could not be acquired. Internal error may have occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM04039-E	An attempt to register resource information failed.	An attempt to register resource information failed. Internal error may have occurred.	

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Table 2.88.3-1 Message IDs and Actions to be Taken (2/5)

No.	Message ID	Message	Description	Action
9	KAQM04048-E	An error was detected while accessing the specified device file.	An error was detected while accessing the specified device file.	Check the specified device file, and then execute the command again. If the error occurs again, collect the OS log and send it to the Support Center because a LU failure may have occurred. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM04049-E	The specified device file does not exist, or the size of the LU allocated to the virtual server was changed.	The specified device file does not exist, or the size of the LU allocated to the virtual server was changed.	Check the specified device file, and then execute the command again.
11	KAQM04072-E	Device files of two or more storage systems were specified.	Device files of two or more storage systems were specified.	Execute the command again with specifying device files of one storage system.
12	KAQM04073-E	The specified number of device files has exceeded the maximum.	The specified number of device files has exceeded the maximum.	Check the specified number of device files and execute the command again.
13	KAQM04074-E	The specified device file name (*device-file-name*) is invalid.	The specified device file name (*device-file-name*) is invalid.	Specify a correct device file name and execute the command again.
14	KAQM04126-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
15	KAQM04181-E	Acquisition of volume group information failed.	Acquisition of volume group information failed.	Execute the command again after a while. If the error occurs again, execute "C.2.2 Determination Procedure when a Failure Occurred." If you are referring to here from Troubleshooting, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
16	KAQM04227-Q	LUs with different drive types or pools are mixed together. If you perform this operation, automatic assignment processing will not be performed on the specified volume group. Are you sure you want to perform this operation? (y/n)	LUs with different drive types or pools are mixed together. If you perform this operation, automatic assignment processing will not be performed on the specified volume group. Are you sure you want to perform this operation? (y/n)	Enter "y" to create a volume group in which LUs with different drive types or pools are mixed together (disable automatic allocation). Enter "n" to cancel.

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Table 2.88.3-1 Message IDs and Actions to be Taken (3/5)

No.	Message ID	Message	Description	Action
17	KAQM04229-W	The LU (*LU-name*) is being used by another volume group.	The LU (*LU-name*) is being used by another volume group.	Specify a LU which is not already allocated.
18	KAQM04230-W	The LU (*LU-name*) was not assigned to the volume group because a volume group already exists that contains an LU in the same storage system and with the same drive type and pool as the specified LU.	A volume group exists that has LU that is same storage system, same drive type, and same pool number as the LU (*LU-name*).	Create a volume group specified in the form of volume group name.
19	KAQM04233-E	The volume group cannot be created or expanded because the resource group or virtual server is not running properly.	Volume group functions cannot be used because the resource group or virtual server is not operating normally.	Check the status of the node and resource group, then execute the command again.
20	KAQM04235-E	The specified volume group name (*volume-group-name*) already exists.	The input volume group name (*volume-group-name*) is duplicated.	Specify another volume group name.
21	KAQM04239-E	The specified LU is already assigned to a volume group.	The specified LU is being used by another volume group.	Execute the command again with specifying another LU.
22	KAQM04240-E	Creation of volume group to assign the LU (*LU-name*) to failed.	Create of the volume group which assigned LU(*LU-name*) failed.	Take measures by referring to the subsequent message.
23	KAQM04249-W	An error occurred in the LU (*LU-name*).	An error occurred in the LU (*LU-name*).	Check the LU status and execute the command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
24	KAQM04251-E	The volume group was neither created nor expanded.	Creation and expansion of the volume group were not performed.	Ask the system administrator about the status of creating the volume group, and then execute the command again.
25	KAQM04254-E	A volume group operation failed.	A volume group operation failed.	Recover the LU failure by executing "C.2.2 Determination Procedure when a Failure Occurred," reboot the OS, and then execute the command again If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
26	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command after a while. If a node stopped while processing, wait about 15 minutes or reboot the stopped node.

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Table 2.88.3-1 Message IDs and Actions to be Taken (4/5)

No.	Message ID	Message	Description	Action
27	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
28	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter (<*parameter*>).	Specify a correct parameter and execute the command again.
29	KAQM14132-E	No license is set to allow use of basic functionality.	No license is set to allow use of basic functionality.	Set a license. Ask the system administrator the setting or set it by executing the licenseset command. For how to set a license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
30	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to set a system management IP address, and then execute the command again.
31	KAQM14134-E	An error occurred in the shared processing of commands. (Error=*error*)	An error occurred in the shared processing of commands. (Error=*error*)	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
32	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.

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Table 2.88.3-1 Message IDs and Actions to be Taken (5/5)

No.	Message ID	Message	Description	Action
33	KAQM14155-E	The value "*duplicated-value*" is duplicated.	The value "*duplicated-value*" is duplicated.	Delete the duplicated value and execute the command again.
34	KAQM14157-E	The specified parameter "*parameter-name*" cannot be used because it exceeds maximum-length characters. (specified value = *specified-value*)	The specified parameter "*parameter-name*" cannot be used because it exceeds maximum-length characters. (specified value = *specified-value*)	Execute the command again with specifying a value not to exceed the maximum number of characters.
35	KAQM14158-E	The specified parameter "parameter-name" includes an invalid character. (specified value = *specified-value)*	The specified parameter "parameter-name" includes an invalid character. (specified value = *specified-value)*	Execute the command again with specifying a value in the characters that can be used.
36	KAQM14161-E	A timeout occurred during the resource operation.	The system may be under a heavy load, or another resource operation may have been executed.	Check the node status, and execute the command again after a while. If this message is output again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.89 Deleting Volume Group (vgrdelete)

This command deletes volume groups.

NOTE:
- Do not use this command to delete a volume group unless otherwise instructed to do so.
- Do not execute this command before completing the definition of a single node configuration.
- A volume group cannot be deleted when a file system or differential-data storage device exists.
- Operation of the LUs in the deleted volume group will be suspended.

2.89.1 Command line

This command uses the following command lines.

- To delete a volume group:
  vgrdelete [-y] *volume-group-name*

- To display the command format to the standard output:
  vgrdelete -h

Table 2.89.1-1 shows the description of each option.

Table 2.89.1-1 Description of options

No.	Option	Description	Remarks
1	-y	Specify this option to suppress output of confirmation response messages.	—
2	*volume-group-name*	Specify a volume group name to be deleted. The volume group name must start with “vg”, and to be specified in alphanumeric characters and underscores (_) within 16 characters.	—
3	-h	Display the command format to the standard output.	—

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2.89.2 Execution procedure

This subsection describes the procedure for deleting a volume group by executing the vgrdelete command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Confirm the setting status of volume groups by executing the vgrlist command.
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

```
$ sudo vgrlist -c
vg0:27939:27939:normal:lu00(FC/SAS):INTERNAL:-:enable
vg0001:200:190:normal:lu01(SATA,DP 001) lu02(SATA,DP 001):AMS:85011261:enable
vg0002:110:109:normal:lu05(SATA,DP 002) lu10(FC/SAS):AMS:85011261:disable
$
```

Figure 2.89.2-1 Execution Example of the vgrlist Command (1)

(3) Execute the vgrdelete command with specifying a volume group to be deleted. When confirmation message KAQM04244-Q is displayed, enter "y" and press [Enter.]
If other message ID is output, refer to Maintenance Tool "2.89.3 Command termination messages and action to be taken" (MNTT 02-4670).

```
$ sudo vgrdelete vg0002
KAQM04244-Q Are you sure you want to delete the specified volume group? (y/n) y
$
```

Figure 2.89.2-2 Execution Example of the vgrdelete Command

(4) Confirm that the volume group specified in step (3) has been deleted by executing the vgrlist command.
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

```
$ sudo vgrlist -c
vg0:27939:27939:normal:lu00(FC/SAS):INTERNAL:-:enable
vg0001:200:190:normal:lu01(SATA,DP 001) lu02(SATA,DP 001):AMS:85011261:enable
$
```

Figure 2.89.2-3 Execution Example of the vgrlist Command (2)

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2.89.3 Command termination messages and action to be taken

A message may be displayed when the vgrdelete command is executed. Actions to be taken against messages are described in Table 2.89.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.89.3-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter (<*parameter*>).	Specify a correct parameter and reexecute.
2	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.
3	KAQM04024-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to access the cluster management LU or the system file has failed.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM04025-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to acquire the device file information from the cluster management LU or the system file has failed.	
5	KAQM04026-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to update the device file information of the cluster management LU or the system file has failed.	
6	KAQM04027-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to access the cluster management LU or the system file has failed.	
7	KAQM04031-E	A conflict with another system administrator's operation or an internal error may have occurred.	A conflict with another system administrator's operation or an internal error may have occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM04040-E	Deletion of resource information has failed, either because the node or virtual server is not operating normally or because an internal processing problem exists.	Deletion of resource information has failed, either because the node or virtual server is not operating normally or because an internal processing problem exists.	Check the status of the node and resource group, and execute the command again. When there is no problem with the status, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.89.3-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
9	KAQM04126-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM04244-Q	Are you sure you want to delete the specified volume group? (y/n)	Are you sure you want to delete the specified volume group? (y/n)	Enter "y" to delete the specified volume group. Enter "n" to cancel.
11	KAQM04234-E	The volume group cannot be deleted because a file system or differential-data storage device exists.	The volume group cannot be deleted because a file system or differential-data storage device exists.	Delete a file system or differential-data storage device, and then execute the command again.
12	KAQM04237-E	The specified volume group does not exist on an active node or virtual server.	The specified volume group does not exist in the operating node or the virtual server.	Execute the vgrlist command (refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770) to check the specified volume group name and execute the command again.
13	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
14	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to set a system management IP address, and then execute the command again.
15	KAQM14134-E	An error occurred in the shared processing of commands. (Error=*error*)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
16	KAQM14161-E	A timeout occurred during the resource operation.	The system may be under a heavy load, or another resource operation may have been executed.	Check the node status and execute the command again after a while. If this message is output again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.90 Expanding Volume Group (vgrexpand)

This command expands volume groups.

NOTE:
- Do not use this command to delete a volume group unless otherwise instructed to do so.
- Do not execute this command before completing the definition of a single node configuration.
- It is required that the status of the resource group is “online.”

When you execute the command without specifying “*volume-group-name*” on expanding two or more volume groups, single error on expanding a volume group will not result in an abortion of the process; expanding the rest of the volume groups will be continued. However, each time an error occurs, messages indicating the failed volume group name and indicating the details are output.

When you execute the command without specifying “*volume-group-name*” and with specifying a LU which meets either of the following conditions, a warning message is output and the expansion using the LU will be skipped. If all LUs are skipped, an error message (KAQM04251-E) is output.

- The LU is already assigned to a volume group
- No volume group which corresponds to the frame, drive type, and DP pool exists.
- Two or more volume groups which corresponds to the frame, drive type, and DP pool exist.

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2.90.1 Command line

This command uses the following command lines.

- To expand a volume group:
  vgrexpand [-y] [*volume-group-name*] LU[,LU...]

- To display the command format to the standard output:
  vgrexpand -h

Table 2.90.1-1 shows the description of each option.

Table 2.90.1-1 Description of options

No.	Option	Description	Remarks
1	-y	Specify this option to suppress output of confirmation response messages.	—
2	*volume-group-name*	Specify a volume group name to be expanded. The volume group name must start with “vg”, and to be specified in alphanumeric characters and underscores (_) within 16 characters.	If this option is omitted, a volume group that corresponds to the frame, drive type, and DP pool of the specified LU will be expanded.
3	LU[,LU...]	Specify a LU name to be assigned to a volume group in the format “luXX” (XX: a hexadecimal number from 00 to FF.) LU names are case-insensitive. Note that it is not possible to specify a V-VOL of Copy-on-Write Snapshot. Although two or more LUs can be specified, it is not possible to specify LUs on different frames when specifying a volume group. To specify two or more LUs, separate the LU names by a comma (“,”) in the format “luXX,luXX”.	When two or more LUs are specified, an error occurs in the following cases. ・Same LU is specified ・256 or more LUs are specified ・Specified LU name starts/ends with “,”.
4	-h	Display the command format to the standard output.	—

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2.90.2 Execution procedure

This subsection describes the procedure for expanding a volume group by executing the vgrexpand command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Confirm the setting status of volume groups by executing the vgrlist command.
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

```
$ sudo vgrlist -c
vg0:27939:27939:normal:lu00(FC/SAS):INTERNAL:-:enable
vg01:10:9:normal:lu01(FC/SAS):AMS:85011261:enable
vg02:200:190:normal:lu05(SATA) lu10(SATA):AMS:85011261:enable
$
```

Figure 2.90.2-1 Execution Example of the vgrlist Command (1)

(3) Confirm LU numbers to be added by executing the lumaplist command and write down them. For details, refer to Maintenance Tool "2.65 User LU Mapping Display (lumaplist)" (MNTT 02-3470).

```
$ sudo lumaplist -v
LUN  Target  Model     serial   LDEV(  hex)  type    size used function    RG DP  Used page  Pool  Free pool  Total pool
00      -    INTERNAL     -      - (    -)   FC/SAS 27940.000GB VG:vg0   1 -        -   -        -
01   N0-T000 AMS      85011262    0(  0000)  FC/SAS   10.000GB VG:vg01  2 -        -   -        -          -
02   N0-T001 AMS      85011262    1(  0001)  SATA    100.000GB VG:Free  2 -        -   -        -          -
05   N0-T001 AMS      85011262    1(  0001)  SATA    100.000GB VG:vg02  2 -        -   -        -          -
10   N0-T001 AMS      85011262    1(  0001)  SATA    100.000GB VG:vg02  2 -        -   -        -          -
$
```

Figure 2.90.2-2 Execution Example of the lumaplist Command

(4) The following shows an execution example to expand a volume group with the vgrexpand command.

(a) In the case execute the command with specifying a volume group to be expanded
When drive type or pool of the LU to be added is different from that of the specified volume group, KAQM04227-Q message is output. When there is no problem, enter "y" and press [Enter] key. Enter "n" to cancel.
KAQM04227-Q message is not output when the drive type and the pool to be added are same as that of the specified volume group.
If other message ID is output, refer to Maintenance Tool "2.90.3 Command termination messages and action to be taken" (MNTT 02-4730).

```
$ sudo vgrexpand vg01 lu02
KAQM04227-Q LUs with different drive types or pools are mixed together. If you perform
this operation, automatic assignment processing will not be performed on the specified
volume group. Are you sure you want to perform this operation? (y/n)y
$
```

Figure 2.90.2-3 Execution Example of the vgrexpand Command (with specifying a volume group)

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(b) In the case execute the command without specifying a volume group to be expanded
An automatic-assignment-enabled volume group of which drive type and pool are same as that of the specified LU will be expanded.
When there is no volume group with same drive type and pool as that of the specified LU, or when there are two or more volume groups with same drive type and pool, or when the specified LU is already allocated to another volume group, KAQM042xx-W and KAQM04251-E messages are output and the command terminates without expanding the volume group.
If other message ID is output, refer to Maintenance Tool "2.90.3 Command termination messages and action to be taken" (MNTT 02-4730).

```
$ sudo vgrexpand lu02
$
```

Figure 2.90.2-4 Execution Example of the vgrexpand Command (without specifying a volume group)

(5) Confirm that the volume group has been expanded by executing the vgrlist command.
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

(a) An execution example of step (4) (a) to expand a volume group "vg1"

```
$ sudo vgrlist -c
vg0:27939:27939:normal:lu00(FC/SAS):INTERNAL:-:enable
vg01:110:109:normal:lu01(FC/SAS) lu02(SATA):AMS:85011261:disable
vg02:200:190:normal:lu05(SATA) lu10(SATA):AMS:85011261:enable
$
```

Figure 2.90.2-5 Execution Example of the vgrlist Command (2)

(b) An execution example of step (4) (b) to expand an automatic-assignment-enabled volume group

```
$ sudo vgrlist -c
vg0:27939:27939:normal:lu00(FC/SAS):INTERNAL:-:enable
vg01:10:9:normal:lu01(FC/SAS):AMS:85011261:enable
vg02:300:285:normal:lu05(SATA) lu10(SATA) lu02(SATA):AMS:85011261:enable
$
```

Figure 2.90.2-6 Execution Example of the vgrlist Command (3)

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2.90.3 Command termination messages and action to be taken

A message may be displayed when the vgrexpand command is executed. Actions to be taken against messages are described in Table 2.90.3-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.90.3-1 Message IDs and Actions to be Taken (1/5)

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter (<*parameter*>).	Specify a correct parameter and reexecute.
2	KAQM04022-E	An attempt to connect to a device file has failed.	An attempt to connect to a device file has failed.	Execute the fpstatus command to check the connection status of the specified device file, and then execute the vgrexpand command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM04023-E	Information acquisition of a device file failed because of an unexpected error in internal processing.	Information acquisition of a device file failed because of an unexpected error in internal processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
4	KAQM04024-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to access the cluster management LU or the system file has failed.	
5	KAQM04025-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to acquire the device file information from the cluster management LU or the system file has failed.	
6	KAQM04026-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to update the device file information of the cluster management LU or the system file has failed.	
7	KAQM04031-E	A conflict with another system administrator's operation or an internal error may have occurred.	A conflict with another system administrator's operation or a system error may have occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM04034-E	Resource group or virtual server information could not be acquired.	Resource group or virtual server information could not be acquired. Internal error may have occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.90.3-1 Message IDs and Actions to be Taken (2/5)

No.	Message ID	Message	Description	Action
9	KAQM04048-E	An error was detected while accessing the specified device file.	An error was detected while accessing the specified device file.	(Only when "-lu" option is specified) Check the specified device file, and then execute the command again. If the error occurs again, collect the OS log and send it to the Support Center because a LU failure may have occurred. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM04049-E	The specified device file does not exist, or the size of the LU allocated to the virtual server was changed.	The specified device file does not exist, or the size of the LU allocated to the virtual server was changed.	Check the specified device file, and then execute the command again.
11	KAQM04072-E	Device files of two or more storage systems were specified.	Device files of two or more storage systems were specified.	Execute the command again with specifying a device file of one storage system.
12	KAQM04073-E	The specified number of device files has exceeded the maximum.	The specified number of device files has exceeded the maximum.	Check the specified number of device files and execute the command again.
13	KAQM04074-E	The specified device file name (*device-file-name*) is invalid.	The specified device file name (*device-file-name*) is invalid.	Specify a correct device file name and execute the command again.
14	KAQM04126-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
15	KAQM04181-E	Acquisition of volume group information failed.	Acquisition of volume group information failed.	Execute the command again after a while. If the error occurs again, execute "C.2.2 Determination Procedure when a Failure Occurred." If you are referring to here from Troubleshooting, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
16	KAQM04227-Q	LUs with different drive types or pools are mixed together. If you perform this operation, automatic assignment processing will not be performed on the specified volume group. Are you sure you want to perform this operation? (y/n)	LUs with different drive types or pools are mixed together. If you perform this operation, automatic assignment processing will not be performed on the specified volume group. Are you sure you want to perform this operation? (y/n)	Enter "y" when there is no problem that LUs with different drive types or pools are mixed together in a volume group (automatic allocation is disabled.). Enter "n" to cancel.

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Table 2.90.3-1 Message IDs and Actions to be Taken (3/5)

No.	Message ID	Message	Description	Action
17	KAQM04229-W	The LU (*LU-name*) is being used by another volume group.	The LU (*LU-name*) is being used by another volume group.	Specify a LU which is not already allocated.
18	KAQM04231-W	The LU (*LU-name*) was not assigned to the volume group because no volume groups exist that contain an LU in the same storage system and with the same drive type and pool as the specified LU.	A volume group does not exist that has LU that is same storage system, same drive type, and same pool number as the LU (*LU-name*).	Expand a volume group with specifying an existing volume group name.
19	KAQM04232-W	The LU (*LU-name*) was not assigned to the volume group because multiple volume groups exist that contain an LU in the same storage system and with the same drive type and pool as the specified LU.	Multiple volume groups exist that have LU that is same storage system, same drive type, and same pool number as the LU (*LU-name*).	Check the volume group name to be expanded again.
20	KAQM04233-E	The volume group cannot be created or expanded because the resource group or virtual server is not running properly.	Volume group functions cannot be used because the resource group or virtual server is not operating normally.	Check the status of the node and resource group, and execute the command again.
21	KAQM04237-E	The specified volume group does not exist on an active node or virtual server.	The specified volume group does not exist in the operating node or the virtual server.	Execute the vgrlist command (refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770) to check the specified volume group name and execute the command again.
22	KAQM04239-E	The specified LU is already assigned to a volume group.	The specified LU is being used by another volume group.	Execute the command again with specifying another LU.
23	KAQM04241-E	Assignment to the volume group (*volume-group-name*) that already contains the LU (*LU-name*) failed.	Expand of the volume group (*volume-group-name*) which assigned LU(*LU-name*) failed.	Take measures by referring to the subsequent message.
24	KAQM04249-W	An error occurred in the LU (*LU-name*).	An error occurred in the LU (*LU-name*).	Recover the LU failure by executing "C.2.2 Determination Procedure when a Failure Occurred," and then execute the command again If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.90.3-1 Message IDs and Actions to be Taken (4/5)

No.	Message ID	Message	Description	Action
25	KAQM04250-W	The LU (*LU-name*) cannot be assigned to the volume group (*volume-group-name*) because an error occurred with an LU in the volume group.	Do not perform expand the volume group (*volume-group-name*) by using the LU (*LU-name*) because an error occurred in the LU that make up the volume group.	Recover the LU failure by executing "C.2.2 Determination Procedure when a Failure Occurred," and then execute the command again If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
26	KAQM04251-E	The volume group was neither created nor expanded.	Creation and expansion of the volume group were not performed.	Ask the system administrator about the status of creating the volume group, and then execute the command again.
27	KAQM04253-E	An error occurred with one or more LUs in the specified volume group.	An error occurred in the LU that make up the specified volume group.	Check the LU status and execute the command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
28	KAQM04254-E	A volume group operation failed.	A volume group operation failed.	Recover the LU failure by executing "C.2.2 Determination Procedure when a Failure Occurred," reboot the OS, and then execute the command again If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.90.3-1 Message IDs and Actions to be Taken (5/5)

No.	Message ID	Message	Description	Action
29	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
29	KAQM14129-E	An error occurred in the <*Cluster Management LU*> or a system file, or access to the <*Cluster Management LU*> is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute "C.2.2 Determination Procedure when a Failure Occurred."
30	KAQM14132-E	No license is set to allow use of basic functionality.	No license is set to allow use of basic functionality.	Set a license. Ask the system administrator the setting or set it by executing the licenseset command. For how to set a license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
31	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to set a system management IP address, and then execute the command again.
32	KAQM14134-E	An error occurred in the shared processing of commands. (Error=*error*)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
33	KAQM14138-E	There are too many or too few parameters.	The number of specified parameters is invalid.	Check the command format and specify the correct parameters. Then execute the command again.
34	KAQM14155-E	The value "*duplicated-value*" is duplicated.	The value "*duplicated-value*" is duplicated.	Delete the duplicated value and execute the command again.

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2.91 List of Volume Groups (vgrlist)

This command outputs a list of volume groups.

NOTE: Do not execute this command before completing the definition of a single node configuration.

If you execute the command with specifying “volume-group-name”, only details of the specified volume group will be output. Volume group names are sorted in ascending order to output the details. Details to be output in a list or separated by colons (:).

When addition of new LU is detected, automatic assignment of a volume group is performed.

2.91.1 Command line

This command uses the following command lines.

- To output a list of volume groups:
  vgrlist [-c] [--list] [--assign {yes|no}] [*volume-group-name*]

- To display the command format to the standard output:
  vgrlist -h

Table 2.91.1-1 shows the description of each option.

Table 2.91.1-1 Description of options

No.	Option	Description	Remarks
1	-c	Specify this option to output the result in a colon-separated form.	—
2	--list	Specify this option to display only a list of volume groups. If this option is specified, LU information which is newly added will not be output.	—
3	--assign {yes|no}	Specify this option to suppress output of confirmation response messages for automatic assignment of a volume group. yes: Perform an automatic assignment when new LU is added. no: Suspend the command processing when new LU is added.	When both this option and “*volume-group-name*” are specified, this option will be ignored.
4	*volume-group-name*	Specify a volume group name to be output. The volume group name must start with “vg”, and to be specified in alphanumeric characters and underscores (_) within 16 characters.	—
5	-h	Display the command format to the standard output.	—

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2.91.2 Output format

The output format in executing the vgrlist command is shown in Figure 2.91.2-1

(1) When displaying details (not specifying “-c” option)

```
【Newly added LU information】
Added LUs:
<LU information>                                   } Displayed when newly
 :            (Repeat for the number of newly added LUs)   added LU exists

【Volume group information】
List of volume groups:
The number of volume groups(<counter>)
<Items>:  <Value>                                  } Repeat for the number
          :  (Repeat for the number of items)        of volumes
<Blank line>
```

Figure 2.91.2-1 Output Format of the vgrlist Command

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Table 2.91.2-1 shows the description of the items in the output format of the vgrlist command.

Table 2.91.2-1 Content of Output Format (1/2)

No.	Item		Description
1	LU information		Repeat the following information for the number of LUs.
		Device file name	Displays a device file name (e.g.: /dev/enas/luXX).
		Drive type	Displays a drive type. FC/SAS (in the case of FC, SAS, or a nearline SAS of internal drive) / SATA (in the case of SATA, or SSD of internal drive) / SSD (in the case of SSD (or FMD/FMC)) / SAS7K (in the case of a nearline SAS) / - (in the case of an external storage or HDP)
		Device file capacity	Displays a device file capacity by the GB.
		Default controller	Displays a default controller. CTL0: controller 0 CTL1: controller 1 -: In the case of an internal drive or when it is unidentifiable (‘-’ is displayed except when it is DF700).
		Target ID	Displays a target ID. NX-TYYY (X: 0 or 1, Y: ID (both are decimal numbers)) ‘-’ is displayed in the case of an internal drive.
		Model	Display a model name of the array the LU belongs. AMS : any one of DF800S, DF800M, DF800H, DF800EXS, DF800ES, DF800EM, or DF800EH HUS : any one of DF850XS, DF850S, or DF850MH USP : RAID500 FC NSC55 : RAID500 RK USP_V : RAID600 FC USP_VM : RAID600 RK VSP : RAID700 VSP_G1000 : RAID800 HUS_VM : HM700 VSP_Gx00 : HM800 (any of VSP G200, G400, G600, G800, VSP F400, F600, F800) HM850 (any of VSP G350, G370, G700, G900, VSP F350, F370, F700, F900)
		Serial number	Displays a serial number.
		Dynamic Provisioning information	Displays the information below DP: V-VOL of Dynamic Provisioning -: Other than V-VOL of Dynamic Provisioning
		DP pool ID	Displays the information below when the detailed information display function (“-v” option) is enabled. V-VOL of Dynamic Provisioning: DP pool ID Other than V-VOL of Dynamic Provisioning: -

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Table 2.91.2-1 Content of Output Format (2/2)

No.	Item		Description
2	Counter		Counts up the number of volume groups from 1.
3	Items		Displays the following items in 25 characters with an one-byte leading space.
		Volume group	Volume group name
		Total size(GB)	Displays the total capacity of the volume group in the GB (in integer.) If errors occur on all LUs, “-” is displayed.
		Free size(GB)	Displays the free capacity of the volume group in the GB (in integer.) If errors occur on all LUs, “-” is displayed.
		LU status	Displays status of the LUs constituting the volume group. When status of the LUs is normal: normal When any of the LUs are blocked: error
		LUs	Displays the LU names constituting the volume group in ascending order. [When it is not a real LU] (DP pool ID is not displayed) luXX (drive type) [luXX(drive type)...] [When it is not a virtual LU] luXX (drive type, DP pool ID) [luXX (drive type, DP pool ID)…] [When it is a virtual LU] (If it is an external storage, “#” is displayed after the LU name.) lu10#(-) Below are the drive types to be displayed. In the case of FC/SAS/a nearline SAS of internal drive: FC/SAS In the case of SATA/SSD of internal drive: SATA In the case of SSD(or FMD/FMC): SSD In the case of a nearline SAS: SAS7K In the case of an external storage/a LU in RAID and HDP (including HDT): -
		Model	Displays a model identifier.
		Serial number	Displays a serial number. In the case of an internal drive, “-” is displayed.
		Auto assign	Displays whether the automatic assignment is enabled or disabled. In the case the automatic assignment is enabled: enable In the case the automatic assignment is disabled: disable
4	Value		Displays values of the items in No.3.

(2) When displaying in a colon-separated form (specifying “-c” option)
Values of the items described in No.3 of Table 2.91.2-1 are displayed in a colon-separated form.

```
<Volume group> : <Total size(GB)> : <Free size(GB)> : <LU status> : <LUs> : <Model> :
<Serial number> : <Auto assign>
<Blank line>
```

Repeat for the number of volumes

Figure 2.91.2-1 Output Format of the vgrlist Command

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2.91.3 Execution procedure

This subsection describes the execution procedure of the vgrlist command.

(1) Execution procedure to output the information of all volume groups

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Figure 2.91.3-1 and 2.91.3-2 show an example of executing the vgrlist command.
When a message ID is output, refer to Maintenance Tool "2.91.4 Command termination messages and action to be taken" (MNTT 02-4840).

```
$ sudo vgrlist --list
List of volume groups:
The number of volume groups(1)
 Volume group          : vg0
 Total size(GB)        : 27939
 Free size(GB)         : 27939
 LU status             : normal
 LUs                   : lu00(FC/SAS))
 Model                 : INTERNAL
 Serial number         : -
 Auto assign           : enable

The number of volume groups(2)
 Volume group          : vg0001
 Total size(GB)        : 200
 Free size(GB)         : 190
 LU status             : normal
 LUs                   : lu01(SATA,DP 001) lu02(SATA,DP 001)
 Model                 : AMS
 Serial number         : 85011261
 Auot assign           : enable

The number of volume groups(3)
 Volume group          : vg0002
 Total size(GB)        : 110
 Free size(GB)         : 109
 LU status             : normal
 LUs                   : lu05(SATA,DP 002) lu10(FC/SAS)
 Model                 : AMS
 Serial number         : 85011261
 Auto assign           : disable
$
```

Figure 2.91.3-1 Execution Example of the vgrlist Command (with specifying "—list" option)

```
$ sudo vgrlist -c
vg0:27939:27939:normal:lu00(FC/SAS):INTERNAL:-:enable
vg0001:200:190:normal:lu01(SATA,DP 001) lu02(SATA,DP 001):AMS:85011261:enable
vg0002:110:109:normal:lu05(SATA,DP 002) lu10(FC/SAS):AMS:85011261:disable
$
```

Figure 2.91.3-2 Execution Example of the vgrlist Command (with specifying "-c" option)

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(2) Execution procedure for performing the automatic assignment to a volume group

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Figure 2.91.3-3 shows an example of executing the vgrlist command.
When newly added LU(s) exists, information of the added LU and KAQM04226-Q message are output. Enter "y' and press [Enter] key if you want to perform the automatic assignment. The automatic assignment process will be suspended if you enter "n".

```
$ sudo vgrlist
Added LUs:
 /dev/enas/lu01 FC/SAS 10.000GB - N0-T002 AMS 85011261 - -
 /dev/enas/lu02 FC/SAS 10.000GB - N0-T002 AMS 85011261 - -

KAQM04226-Q Newly added LUs were detected. When automatic assignment processing is
performed, volume groups are automatically created and expanded according to the storage
systems the LUs are in, the drive types, and the pools. When automatic assignment
processing is not performed, you must manually create and expand the volume groups. Are
you sure you want to perform automatic assignment processing? (y/n) y
```

Figure 2.91.3-3 Execution Example of the vgrlist Command (KAQM04226-Q)

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(c) Figure 2.91.3-4 shows an output example after performing the automatic assignment to a volume group.
When a message ID is output, refer to Maintenance Tool "2.91.4 Command termination messages and action to be taken" (MNTT 02-4840).

```
$ sudo vgrlist
Added LUs:
 /dev/enas/lu01 FC/SAS 10.000GB - N0-T002 AMS 85011261 - -
 /dev/enas/lu02 FC/SAS 10.000GB - N0-T002 AMS 85011261 - -

KAQM04226-Q Newly added LUs were detected. When automatic assignment processing is
performed, volume groups are automatically created and expanded according to the storage
systems the LUs are in, the drive types, and the pools. When automatic assignment
processing is not performed, you must manually create and expand the volume groups. Are
you sure you want to perform automatic assignment processing? (y/n) y
List of volume groups:
The number of volume groups(1)
 Volume group          : vg0
 Total size(GB)        : 27939
 Free size(GB)         : 27939
 LU status             : normal
 LUs                   : lu00(FC/SAS)
 Model                 : INTERNAL
 Serial number         : -
 Auto assign           : enable

The number of volume groups(2)
 Volume group          : vg0001
 Total size(GB)        : 20
 Free size(GB)         : 19
 LU status             : normal
 LUs                   : lu01(FC/SAS) lu02(FC/SAS)
 Model                 : AMS
 Serial number         : 85011261
 Auto assign           : enable

$
```

Figure 2.91.3-4 Execution Example of the vgrlist Command (when the automatic assignment to a volume group is performed)

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2.91.4 Command termination messages and action to be taken

A message may be displayed when the vgrlist command is executed. Actions to be taken against messages are described in Table 2.91.4-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.91.4-1 Message IDs and Actions to be Taken (1/4)

No.	Message ID	Message	Description	Action
1	KAQM04022-E	An attempt to connect to a device file has failed.	An attempt to connect to a device file has failed.	Execute the fpstatus command to check the connection status of the specified device file, and then execute the vgrexpand command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300). [Note] The message may also be output when the file system or LUs have problems. Check the status of file system and LU, check whether a SMNP notification message is output, and if any, take measures by following the message.
2	KAQM04023-E	Information acquisition of a device file failed because of an unexpected error in internal processing.	Information acquisition of a device file failed because of an unexpected error in internal processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM04024-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to access the cluster management LU or the system file has failed.	
4	KAQM04025-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to acquire the device file information from the cluster management LU or the system file has failed.	
5	KAQM04026-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to update the device file information in the cluster management LU or the system file has failed.	
6	KAQM04031-E	A conflict with another system administrator's operation or an internal error may have occurred.	A conflict with another system administrator's operation or an internal error may have occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM04034-E	Resource group or virtual server information could not be acquired.	Resource group or virtual server information could not be acquired. Internal error may have occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
8	KAQM04039-E	An attempt to register resource information failed.	An attempt to register resource information failed.	An internal error may have occurred. Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.91.4-1 Message IDs and Actions to be Taken (2/4)

No.	Message ID	Message	Description	Action
9	KAQM04126-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
10	KAQM04226-Q	Newly added LUs were detected. When automatic assignment processing is performed, volume groups are automatically created and expanded according to the storage systems the LUs are in, the drive types, and the pools. When automatic assignment processing is not performed, you must manually create and expand the volume groups. Are you sure you want to perform automatic assignment processing? (y/n)	The newly added LU was detected. When performing the automatic assignment, according to storage system, drive type, and pool number, volume group is automatically created or expanded. When not performing the automatic assignment, the LU will be in operation suspension state and it is necessary to create or expand the volume group manually. Are you sure you want to perform the automatic assignment? (y/n)	Enter "y" for performing the automatic assignment of the newly added LU. Enter "n" for not performing the automatic assignment.
11	KAQM04232-W	The LU (*LU-name*) was not assigned to the volume group because multiple volume groups exist that contain an LU in the same storage system and with the same drive type and pool as the specified LU.	Multiple volume group exist that has LU that is same storage system, same drive type, and same pool number as the LU (*LUname*).	Specify a volume group name to be extended.
12	KAQM04233-E	The volume group cannot be created or expanded because the resource group or virtual server is not running properly.	Volume group functions cannot be used because the resource group or virtual server is not operating normally.	Check the status of the node and resource group, and execute the command again. When the status of the resource group is "OFFLINE," the volume group functions cannot be used.
13	KAQM04237-E	The specified volume group does not exist on an active node or virtual server.	The specified volume group does not exist in the operating node or the virtual server.	Execute the vgrlist command (refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770) to check the specified volume group name and execute the command again.
14	KAQM04240-E	Creation of a volume group to assign the LU (*LU-name*) to failed.	Create of the volume group which assigned LU(*LUname*) failed.	Take measures by referring to the subsequent message.
15	KAQM04241-E	Assignment to the volume group (*volume-group-name*) that already contains the LU (*LU-name*) failed.	Expand of the volume group(*volume group name*) which assigned LU(*LUname*) failed.	Take measures by referring to the subsequent message.
16	KAQM04249-W	An error occurred in the LU (*LU-name*).	An error occurred in the device file.	Recover the LU failure by executing "C.2.2 Determination Procedure when a Failure Occurred," and then execute the command again If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
17	KAQM04250-W	The LU (*LU-name*) cannot be assigned to the volume group (*volume-group-name*) because an error occurred with an LU in the volume group.	An error occurred in the device file that makes up the volume group.	

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Table 2.91.4-1 Message IDs and Actions to be Taken (3/4)

No.	Message ID	Message	Description	Action
18	KAQM04251-E	The volume group was neither created nor expanded.	Creation and expansion of the volume group were not performed.	Ask the system administrator about the status of creating the volume group, and then execute the command again.
19	KAQM04254-E	A volume group operation failed.	A volume group operation failed.	Recover the LU failure by executing "C.2.2 Determination Procedure when a Failure Occurred," reboot the OS, and then execute the command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
20	KAQM04256-W	The LU (<*LU-name* >) is being used by another volume group.	The LU is being used by another volume group.	Check the volume group status.
21	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.91.4-1 Message IDs and Actions to be Taken (4/4)

No.	Message ID	Message	Description	Action
22	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter (<*parameter*>).	Specify a correct parameter and reexecute.
23	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to set a system management IP address, and then execute the command again.
24	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands. (Error=<*error*>)	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300)
25	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify correct parameters. Then execute the command again.
26	KAQM14161-E	A timeout occurred during the resource operation.	The system may be under a heavy load, or another resource operation may have been executed.	Check the node status and execute the command again after a while. If this message is output again, collect the OS log and send it to the Support Center because a LU failure may have occurred. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.92 Repairing Volume Group (vgrrepair)

This command removes failed volume groups. When a volume group not failed is specified, this command terminates normally.

NOTE:
- Do not use this command to delete a volume group unless otherwise instructed to do so.
- Do not execute this command before completing the definition of a single node configuration.

When "--list" option is specified, a list of failed LUs, or a list of file systems and differential-data storage devices which use the specified LU is output.

If there is a file system or a differential-data storage device which is enabled due to the failure, you cannot repair the volume group. Before repairing a volume group, it is required to delete all file systems and differential-data storage devices which are output by executing the command with "--list" option.

2.92.1 Command line

This command uses the following command lines.

- To repair volume groups
  vgrrepair [--list [--lu *LU*]] [-y] *volume-group-name*

- To display the command format to the standard output:
  vgrrepair -h

Table 2.92.1-1 shows the description of each option.

Table 2.92.1-1 Description of options

No.	Option	Description	Remarks
1	-y	Specify this option to suppress output of confirmation response messages.	The default value is 180 (3minutes).
2	--list	Specify this option to display a list of failed LUs, or a list of file systems which use the specified LU.	—
3	--lu *LU*	Specify this option to display a list of file systems which use the specified LU.	When this option is omitted, a list of file systems which use failed LUs is displayed.
4	*volume-group-name*	Specify a volume group name to be repaired. The volume group name must start with "vg", and to be specified in alphanumeric characters and underscores (_) within 16 characters.	—
5	-h	Display the command format to the standard output.	—

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2.92.2 Output format

The output format in executing the vgrrepair command is shown in Figure 2.92.2-1

```
[List of disabled file systems and differential-data storage devices] (only when "—list"
option is specified)
List of file systems which is assigning the subject LU:
<File system name>
                : (Repeat for the number of disabled file systems)
<Blank line>
List of file systems which is using diff-dev which is assigning the subject LU:
<File system name>
                : (Repeat for the number of file systems which are using disabled differential-
                  data storage devices)
<Blank line>

[List of removed LUs] (output when "—list" option is not specified)
List of LUs removed from the volume group:
<LU name>
                : (Repeat for the number of removed LUs)
<Blank line>
```

Figure 2.92.2-1 Output Format of the vgrrepair Command

Table 2.92.2-1 shows the description of the items in the output format of the vgrrepair command.

Table 2.92.2-1 Description of the Items in the Output Format

No.	Item	Description
1	File system name	A name of disabled file system
2	LU name	A name of removed LU (luXX)

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2.92.3 Execution procedure

This subsection describes the procedure to remove a LU assigned to a volume group by executing the vgrrepair command.

(1) Execution procedure to remove an unnecessary LU assigned to a volume group by mistake

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Identify the volume group name to which the LU is assigned by mistake.
For details, refer to Maintenance Tool "2.65 User LU Mapping Display (lumaplist)" (MNTT 02-3470).

```
$ sudo lumaplist -v
LUN  Target    Model     serial    LDEV(  hex)  type     size used function     RG DP  Used page  Pool    Free pool    Total pool
00   N0-T000   AMS     85011261     0(  0000)  FC/SAS   100.000GB VG:vg0      - DP   5.000GB   001   100.000GB   1000.000GB
01   N0-T001   AMS     85011261     1(  0001)  FC/SAS   100.000GB VG:vg1   001  -          -    -          -           -
02   N0-T002   USP_V      10034   100(000064) FC/SAS   100.000GB VG:vg2   002  -          -    -          -           -
03   N0-T003   USP_V      10034   101(000065) FC/SAS   100.000GB VG:vg2   002  -          -    -          -           -
04   N0-T004   USP_V      10034   102(000066) FC/SAS   100.000GB VG:vg2   002  -          -    -          -           -
05   -         INTERNAL     -       -(    -)   FC/SAS   100.000GB Free       1  -          -    -          -           -
06   -         INTERNAL     -       -(    -)   SATA    100.000GB VG:vg3    2  -          -    -          -           -
$
```

Figure 2.92.3-1 Execution Example of the lumaplist Command (1)

(c) Check that file systems or differential-data storage devices which use the LU to be removed do not exist in the volume group.
Execute the vgrrepair command to check whether file system names or differential-data storage device names are displayed. If there are any, request the system administrator to remove them.
When a message ID is output, refer to Maintenance Tool "2.92.4 Command termination messages and action to be taken" (MNTT 02-4940).

```
$ sudo vgrrepair --list --lu lu04 vg2
List of file systems which is assigning the subject LU:

List of file systems which is using diff-dev which is assigning the subject LU:


$
```

Figure 2.92.3-2 Execution Example of the vgrrepair Command (1)

(d) Request the system administrator to remove paths to the LU to be removed and LDEVs.
Although SIM (KAQK36700-E) is output when LU paths are removed, continue the procedure.

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(e) Execute the vgrrepair command to reconfigure the volume group. Enter “y” and press [Enter] key when KAQM04245-Q message is output.
When a message ID is output, refer to Maintenance Tool “2.92.4 Command termination messages and action to be taken” (MNTT 02-4940).

```
$ sudo vgrrepair vg2
KAQM04245-Q Are you sure you want to recover the specified volume group?(y/n) y
List of LUs removed from the volume group:
 lu04
$
```

Figure 2.92.3-3 Execution Example of the vgrrepair Command (2)

(f) Execute the lumaplist command to check the volume group assignment.
For details, refer to Maintenance Tool “2.65 User LU Mapping Display (lumaplist)” (MNTT 02-3470).

```
$ sudo lumaplist -v
LUN  Target    Model     serial    LDEV(   hex)  type     size used function    RG DP  Used page  Pool    Free pool    Total pool
00   N0-T000   AMS     85011261      0(   0000)  FC/SAS 100.000GB VG:vg0     - DP   5.000GB   001   100.000GB   1000.000GB
01   N0-T001   AMS     85011261      1(   0001)  FC/SAS 100.000GB VG:vg1   001  -        -     -          -           -
02   N0-T002   USP_V      10034  100(000064)  FC/SAS 100.000GB VG:vg1   002  -        -     -          -           -
03   N0-T003   USP_V      10034  101(000065)  FC/SAS 100.000GB VG:vg1   002  -        -     -          -           -
05   -         INTERNAL     -        -(      -)  FC/SAS 100.000GB Free        1  -        -     -          -           -
06   -         INTERNAL     -        -(      -)  SATA    100.000GB VG:vg3     2  -        -     -          -           -
$
```

Figure 2.92.3-4 Execution Example of the lumaplist Command (2)

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(2) Execution procedure to recover the failure of some LUs in a volume group

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the vgrlist --list command to check whether errors have occurred on all LUs in the volume group. When errors have occurred on all LUs in the volume group, "-" is output as [Total size(GB)] and [Free size(GB).] When a block has occurred, "error" may be output as [LU status.]
For details, refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770).

```
$ sudo vgrlist --list
List of volume groups:
The number of volume groups(1)
 Volume group          : vg0
 Total size(GB)        : 20
 Free size(GB)         : 19
 LU status             : normal
 LUs                   : lu00(FC/SAS)
 Model                 : INTERNAL
 Serial number         : -
 Auto assign           : enable

The number of volume groups(2)
 Volume group          : vg1
 Total size(GB)        : 200
 Free size(GB)         : 190
 LU status             : normal
 LUs                   : lu01(SATA) lu02(SATA)
Model                  : INTERNAL
Serial number          : -
 Auto assign           : enable

The number of volume groups(3)
 Volume group          : vg2
 Total size(GB)        : 300
 Free size(GB)         : 209
 LU status             : normal
 LUs                   : lu03(FC/SAS) lu04(FC/SAS) lu05(FC/SAS)
 Model                 : AMS
 Serial number         : 85011261
 Auto assign           : disable
$
```

Figure 2.92.3-5 Execution Example of the vgrlist Command (1)

(c) Execute the lumaplist command to identify the failed LU. "-" is output as [size] of a failed LU. For details, refer to Maintenance Tool "2.65 User LU Mapping Display (lumaplist)" (MNTT 02-3470).

```
$ sudo lumaplist -v
LUN  Target    Model    serial   LDEV(  hex)  type    size used function   RG DP Used page Pool   Free pool  Total pool
00   -         INTERNAL -        -(   -)     FC/SAS   20.000GB VG:vg0     1  -       -    -        -          -
01   -         INTERNAL -        -(   -)     SATA    100.000GB VG:vg1     2  -       -    -        -          -
02   -         INTERNAL -        -(   -)     SATA    100.000GB VG:vg1     2  -       -    -        -          -
03   N0-T002   AMS      10034    100(000064) FC/SAS        -  VG:vg2   002  -       -    -        -          -
04   N0-T003   AMS      10034    101(000065) FC/SAS  100.000GB VG:vg2   002  -       -    -        -          -
05   N0-T004   AMS      10034    102(000066) FC/SAS  100.000GB VG:vg2   002  -       -    -        -          -
$
```

Figure 2.92.3-6 Execution Example of the lumaplist Command (3)

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(d) Check that file systems or differential-data storage devices which use the LU to be removed do not exist in the volume group.
Execute the vgrrepair command to check whether file system names or differential-data storage device names are displayed. If there are any, request the system administrator to remove them.
When a message ID is output, refer to Maintenance Tool "2.92.4 Command termination messages and action to be taken" (MNTT 02-4940).

```
$ sudo vgrrepair --list --lu lu03 vg2
List of file systems which is assigning the subject LU:

List of file systems which is using diff-dev which is assigning the subject LU:


$
```

Figure 2.92.3-7 Execution Example of the vgrrepair Command (3)

(e) Request the system administrator to remove paths to the LU to be removed and LDEVs.
Although SIM (KAQK36700-E) is output when LU paths are removed, continue the procedure.

(f) Execute the vgrrepair command to reconfigure the volume group. Enter "y" and press [Enter] key when KAQM04245-Q message is output.
When a message ID is output, refer to Maintenance Tool "2.92.4 Command termination messages and action to be taken" (MNTT 02-4940).

```
$ sudo vgrrepair vg2
KAQM04245-Q Are you sure you want to recover the specified volume group?(y/n) y
List of LUs removed from the volume group:
 lu03
$
```

Figure 2.92.3-8 Execution Example of the vgrrepair Command (4)

(g) Execute the lumaplist command to check the volume group assignment.
For details, refer to Maintenance Tool "2.65 User LU Mapping Display (lumaplist)" (MNTT 02-3470).

```
$ sudo lumaplist -v
LUN  Target    Model     serial   LDEV(  hex)  type    size used function   RG DP  Used page  Pool    Free pool   Total pool
00   -         INTERNAL  -        -(   -)      FC/SAS   20.000GB VG:vg0     1  -       -       -       -           -
01   -         INTERNAL  -        -(   -)      SATA    100.000GB VG:vg1     2  -       -       -       -           -
02   -         INTERNAL  -        -(   -)      SATA    100.000GB VG:vg1     2  -       -       -       -           -
04   N0-T003   AMS       10034    101(000065)  FC/SAS  100.000GB VG:vg2   002  -       -       -       -           -
05   N0-T004   AMS       10034    102(000066)  FC/SAS  100.000GB VG:vg2   002  -       -       -       -           -
$
```

Figure 2.92.3-9 Execution Example of the lumaplist Command (4)

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(h) Execute the vgrlist --list command to check the volume group status.
For details, refer to Maintenance Tool “2.91 List of Volume Groups (vgrlist)” (MNTT 02-4770).

```
$ sudo vgrlist --list
List of volume groups:
The number of volume groups(1)
 Volume group          : vg0
 Total size(GB)        : 20
 Free size(GB)         : 19
 LU status             : normal
 LUs                   : lu00(FC/SAS)
 Model                 : INTERNAL
 Serial number         : -
 Auto assign           : enable

The number of volume groups(2)
 Volume group          : vg1
 Total size(GB)        : 200
 Free size(GB)         : 190
 LU status             : normal
 LUs                   : lu01(SATA) lu02(SATA)
Model                  : INTERNAL
Serial number          : -
 Auto assign           : enable

The number of volume groups(3)
 Volume group          : vg2
 Total size(GB)        : 200
 Free size(GB)         : 180
 LU status             : normal
 LUs                   : lu04(FC/SAS) lu05(FC/SAS)
 Model                 : AMS
 Serial number         : 85011261
 Auto assign           : disable
$
```

Figure 2.92.3-10 Execution Example of the vgrlist Command (2)

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2.92.4 Command termination messages and action to be taken

A message may be displayed when the vgrrepair command is executed. Actions to be taken against messages are described in Table 2.92.4-1 Message IDs and Actions to be Taken.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.92.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM04023-E	Information acquisition of a device file failed because of an unexpected error in internal processing.	Information acquisition of a device file failed because of an unexpected error in internal processing.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM04024-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to access the cluster management LU or the system file has failed.	
3	KAQM04025-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to acquire the device file information from the cluster management LU or the system file has failed.	
4	KAQM04026-E	An attempt to access the cluster management LU or the system file has failed.	An attempt to update the device file information of the cluster management LU or the system file has failed.	
5	KAQM04031-E	A conflict with another system administrator's operation or an internal error may have occurred.	A conflict with another system administrator's operation or an internal error may have occurred.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM04048-E	An error was detected while accessing the specified device file.	An error was detected while accessing the specified device file.	(Only when "–lu" option is specified) Check the specified device file, and then execute the command again. If the error occurs again, collect the OS log and send it to the Support Center because a LU failure may have occurred. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM04074-E	The specified device file name (*device-file-name*) is invalid.	The specified device file name (*device-file-name*) is invalid.	Specify a correct device file name and execute the command again.
8	KAQM04126-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM04236-E	The volume group contains one or more invalid file systems or differential-data storage devices.	The volume group contains a disabled file system or differential-data storage device.	Remove the disabled file system or differential-data storage device, and then execute the command again.

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Table 2.92.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
10	KAQM04237-E	The specified volume group does not exist on an active node or virtual server.	The specified volume group does not exist in the operating node or the virtual server.	Execute the vgrlist command (refer to Maintenance Tool "2.91 List of Volume Groups (vgrlist)" (MNTT 02-4770) to check the specified volume group name and execute the command again.
11	KAQM04238-E	Recovery of the volume group failed.	Repair of the volume group failed.	Check the FC path status to confirm whether there is a problem with the connection to the storage system. If there is no problem with the connection, execute the command again. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
12	KAQM04245-Q	Are you sure you want to recover the specified volume group?(y/n)	Are you sure you want to repair the specified volume group?(y/n)	Enter "y" to repair the volume group. To cancel, enter "n."
13	KAQM04246-E	An error occurred with all the LUs in the volume group.	An error occurred in all LUs in the volume group.	Check the error information of LU and recover the failure in cooperate with the system administrator. Execute "C.2.2 Determination Procedure when a Failure Occurred."
14	KAQM04255-E	The specified LU is not assigned to the specified volume group.	The specified LU is not assigned to the specified volume group.	Specify a LU that is assigned to the specified volume group.
15	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
16	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	A syntax error exists in the parameter (*<parameter>*).	Specify a correct parameter and reexecute.
17	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to set a system management IP address, and then execute the command again.
18	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.

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2.93 Consistency Checking of the Data in the Virtual Disk (ccstart.sh)

This command executes the consistency checking of data in the virtual disk.
This ccstart.sh command is used to start the consistency checking of the data. Therefore, an error message is not output even if any inconsistency occurred as the result of the checking.

NOTE:
- Do not execute this command on CR220SM.
- Execute the command after confirming that the rebuilding is not in progress.
- To execute this command, leave more than 10 hours interval after the new installation. Initialization of the virtual disk may be executed even after completing the new installation.
- Even if this command is executed when the consistency checking of the data is in progress, the consistency checking which has already been executed is continued.
- Confirm that no physical failure occurs on all drives before executing this command.

2.93.1 Command line

This command uses the following command line.

- To execute consistency checking of data in the virtual disk:
  ccstart.sh

2.93.2 Output format

The output format for the ccstart.sh command execution is shown in Figure 2.93.2-1 Output Format of the ccstart.sh Command.

```
Output format of ccstart.sh

[Execution Result]

Exit Code:[Exit Code]

*1: Values acquired from the system are displayed within [  ]
```

Figure 2.93.2-1 Output Format of the ccstart.sh Command

Table 2.93.2-1 describes the details about the items in Figure 2.93.2-1 Output Format of the ccchk.sh Command.

Table 2.93.2-1 Description of the Items in the Output Format

No	Item	Description
1	[Execution Result]	Displays the start of the data consistency checking has succeeded or failed..
2	[Exit Code]	Displays the return value of a command.

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2.93.3 Execution procedure

This subsection describes the procedure for executing the ccstart.sh command.

(1) Log into the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Use the hwstatus command to check that no physical failure occurs on the internal drives ("Internal HDD Information" displays [ok]). For the details of the command, refer to Maintenance Tool "2.3 Displaying the hardware Status (hwstatus)" (MNTT 02-0140).

(3) Execute the rbldchk.sh command by referring to Maintenance Tool "2.58 Confirmation of Rebuilding Progress of Physical Disk (rbldchk.sh)" (MNTT 02-3170) and confirm that the rebuilding is not in progress.

(4) Execute the ccchk.sh command by referring to Maintenance Tool "2.57 Progress Confirmation of Consistency Checking of the Data in the Virtual Disk' (ccchk.sh)" (MNTT 02-3140) and confirm that the Consistency Check has not been started.

(5) If the OS version is 4.1.1-XX or later, execute the initchk.sh command by referring to Maintenance Tool "2.96 Confirmation of Progress of Virtual Disk Initialization (initchk.sh)" (MNTT 02-5030) and confirm that all virtual disks are not in progress of the initialization.

(6) Execute the ccstart.sh command. An execution example is shown in Figure 2.93.3-1.
When Exit Code is other than 0x00, refer to Maintenance Tool "2.93.4 Command termination messages and action to be taken"(MNTT 02-4990).

```
$ sudo ccstart.sh

Start Check Consistency on Virtual Drive 0 (target id: 0) Success.
Start Check Consistency on Virtual Drive 1 (target id: 1) Success.
Start Check Consistency on Virtual Drive 2 (target id: 2) Success.

Exit Code: 0x00
```

Figure 2.93.3-1 Execution Example of ccstart.sh Command (1)

However, if the log file shown in the Figure .93-3-2 was output, the conditions stated in the node may not be fulfilled. In this case, execute the above steps from (2) to (5) and confirm that the process has not been performed.

```
$ sudo ccstart.sh

Adapter 0:  Check Consistency is not possible on Virtual drive 0 at this time.
Adapter 0:  Check Consistency is not possible on Virtual drive 1 at this time.
Adapter 0:  Check Consistency is not possible on Virtual drive 2 at this time.

Exit Code: 0x00
```

Figure 2.93.3-2 Execution Example of ccstart.sh Command (2)

- Even though the partial drives display "Success" and an error is appeared for the rest of the drives, the consistence checking is executed for the drives the consistency checking has been succeeded.

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(7) To check the progress status of the consistency checking of data, execute the ccchk.sh command.
For the details, refer to Maintenance Tool "2.57 Progress Confirmation of Consistency Checking of the Data in the Virtual Disk (ccchk.sh)" (MNTT 02-3140) (MNTT 02-3140).

(8) After confirming that the consistency checking of the data has been completed using the ccchk.sh command, confirm that the SIM message ((KAQK37528-E) has not been output to make sure the data inconsistency has not been occurred. For how to confirm the SIM message, refer to Maintenance Tool "2.6 Displaying SIMs on This Side (syseventlist)" (MNTT 02-0360).

(9) Execute the log.sh command (refer to Maintenance Tool "2.55 Embedded RAID Controller Internal Log Acquisition (log.sh)" (MNTT 02-3080)) and collect the log.

(10) Execute a file transfer command on the command prompt of the maintenance PC as shown in Figure 2.93.3-3 to download the log file that is created at the step (9). Specifying only file name is available because the files are stored under the home directory for the maintenance personnel (/home/service). For more details about file downloading, refer to Maintenance Tool "1.3.5 Commands used for transferring files" (MNTT 01-0230). An example of using pscp is described here.

```
C:\>pscp -scp -unsafe service@10.0.0.51:*.log  C:\work
service@10.0.0.51's password:
AdapterInfo.log     |     9 kB |    9.5 kB/s | ETA: 00:00:00 | 100%
CmdTool.log         |     1 kB |    1.1 kB/s | ETA: 00:00:00 | 100%
Event.log           |    63 kB |   63.9 kB/s | ETA: 00:00:00 | 100%
LDPDInfo.log        |     8 kB |    9.0 kB/s | ETA: 00:00:00 | 100%
MegaSAS.log         |   555 kB |  277.7 kB/s | ETA: 00:00:00 | 100%
UART.log            |   536 kB |  268.4 kB/s | ETA: 00:00:00 | 100%
```

Figure 2.93.3-3 Log file about Consistency Check downloading for the maintenance PC

(11) Delete the log files that downloaded in the step (10) as shown in Figure 2.93.3-4.
For more details about file deletion, refer to Maintenance Tool "2.26 Deleting the Specified File (rmfile)" (MNTT 02-1660).

```
$ sudo rmfile -y AdapterInfo.log
$ sudo rmfile –y CmdTool.log
$ sudo rmfile -y Event.log
$ sudo rmfile –y LDPDInfo.log
$ sudo rmfile -y MegaSAS.log
$ sudo rmfile –y UART.log
```

Figure 2.93.3-4 Deletion of files that downloaded

(12) Execute the oslogget command (refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300) to download log files from the command prompt of the maintenance PC using the file transfer command as shown in Figure 2.93.3-5. Note that the log file is stored in the directory under the "/log/" shown below.

```
C:\>pscp -scp -unsafe service@10.0.0.51:/log/* C:\work
```

Figure 2.93.3-5 OS Log file downloading for the maintenance PC

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2.93.4 Command termination messages and action to be taken

When the ccstart.sh command is executed, Exit Code is displayed. Table 2.93.4-1 shows the Exit Code and the actions to be taken corresponding to each Exit Code.

Table 2.93.4-1 Exit Code and Actions to be Taken

No.	Exit Code	Description	Action
1	0x00	The operation is terminated normally.	— *Note that execute the log.sh command and oslogget command by performing the confirmation of existence of the data inconsistency (confirming the output of SIM message (KAQK37528-E) to collect the RAID controller log and OS log. For how to confirm the SIM message, refer to Maintenance Tool “2.6 Displaying SIMs on This Side (syseventlist)” (MNTT 02-0360). For the log.sh command, refer to Maintenance Tool “2.55 Embedded RAID Controller Internal Log Acquisition (log.sh) (MNTT 02-3080) and For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).
2	other than 0x00	The operation is terminated abnormally.	Execute the log.sh command and oslogget command to collect the RAID controller log and OS log and send them to the Support Center. For the log.sh command, refer to Maintenance Tool “2.55 Embedded RAID Controller Internal Log Acquisition (log.sh) (MNTT 02-3080) and For details about how to collect OS logs, refer to Maintenance Tool “2.19 Collecting Logs (oslogget)” (MNTT 02-1300).

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2.94 OS Boot Check (bootstatus)

This command checks the OS boot status.

Completion status of the OS boot can be confirmed by executing this command.

NOTE: • This command can be executed if the OS version is 4.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.94.1 Command line

This command uses the following command line.

```
bootstatus
```

2.94.2 Execution procedure

Execution procedure of the bootstatus command is as follows.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the bootstatus command.
Figure 2.94.2-1 shows the example for when OS boot is completed, and Figure 2.94.2-2 shows the example for when OS boot is not completed.

```
$ sudo bootstatus
$
```

Figure 2.94.2-1 Execution Example of the bootstatus Command (When OS boot is completed)

```
$ sudo bootstatus
KAQM14179-W Processing to start the OS is not complete. Wait several minutes, and then log in again.
$
```

Figure 2.94.2-2 Execution Example of the bootstatus Command (When OS boot is not completed)

2.94.3 Command termination messages and action to be taken

If a message is displayed at the time of the bootstatus command execution, this means that OS boot has not been completed.
Table 2.94.3-1 shows the message ID and actions.

Table 2.94.3-1 Message IDs and Actions to be Taken

No.	Message ID	Message	Description	Action
1	KAQM14179-W	Processing to start the OS is not complete. Wait several minutes, and then log in again.	OS boot process has not been completed. Log in again a few minutes later.	Log out and log in again 10 minutes later to confirm that this message is not displayed anymore. If displayed, this means that OS boot has failed. Refer to "C.2.4 Diagnosis for OS Boot Failure"

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2.95 Confirming the Progress of Virtual Disk Initialization (initchk.sh)

This command is used to confirm the progress of the virtual disk initialization which is run in the background.

NOTE: This command can be executed if the OS version is 4.1.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.95.1 Command line

This command uses the following command line.

- In case of confirming the progress of the virtual disk initialization:
  initchk.sh

2.95.2 Output format

The output format for the initchk.sh command execution is shown in Figure 2.95.2-1.

```
Output format of initchk.sh

[Execution Result]

Exit Code:[Exit Code]

*1: Values acquired from the system are displayed within [  ]
```

Figure 2.95.2-1 Output Format of the initchk.sh Command

Table 2.95.2-1 describes the details about the items in Figure 2.95.2-1 Output format of the initchk.sh Command.

Table 2.95.2-1 Description of the Items in the Output Format

No.	Option	Description
1	[Execution Result]	Displays the progress of the initialization for each virtual disk (VD).
2	[Exit Code]	Displays the return value of a command.

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2.95.3 Execution procedure

This subsection describes the procedure for executing the initchk.sh command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the initchk.sh command. An execution example is shown in Figure 2.95.3-1.
VD displays "is not in Progress" is not under the initialization. Either the initialization is not executed or the initialization has already been completed.
When Exit Code is other than 0x00, refer to Maintenance Tool "2.95.4 Command termination messages and action to be taken"(MNTT 02-5020).

```
$ sudo initchk.sh

Background Initialization on VD #0 is not in Progress.
Background Initialization on VD #1 is not in Progress.
Background Initialization on VD #2 (target id #2) Complete 10% in 26 Minutes.

Exit Code: 0x00
```

Figure 2.95.3-1 Execution Example of initchk.sh Command

2.95.4 Command termination messages and action to be taken

Exit Code is displayed when executing the initchk.sh command. Table 2.95.4-1 shows the Exit Code and the actions to be taken corresponding to each Exit Code.

Table 2.95.4-1 Exit Code and Actions to be Taken

No.	Exit Code	Description	Action
1	0x00	The operation is terminated normally.	—
2	other than 0x00	The operation is terminated abnormally.	Execute the log.sh command and oslogget command to collect the RAID controller log and OS log and send them to the Support Center. For the log.sh command, refer to Maintenance Tool "2.55 Embedded RAID Controller Internal Log Acquisition (log.sh) (MNTT 02-3080) and For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.96 Displaying the DHCP Setting of the Network Interface (dhcpget)

This command displays the DHCP setting of the network interface.

NOTE:
- This is not supported in the cluster configuration.
- This command can be executed if the OS version is 4.1.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.96.1 Command line

This command uses the following command lines.

- In case of displaying the DHCP setting of the network interface:
  dhcpget [*interface*]

- To display the command format on the standard output:
  dhcpget -h

Table 2.96.1-1 shows the description of each option.

Table 2.96.1-1 Command Options

No.	Option	Description	Remarks
1	*interface*	Specify the interface name which confirms the DHCP setting.	—
2	-h	Output the command format to the standard output.	—

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2.96.2 Output format

The output format for dhcpget command execution is shown in Figure 2.96.2-1 Output Format of the dhcpget Command.

```
Output format of dhcpget

Interface      :  [interface]
DHCP           :  [On/Off] [(message1)]
message2
IP address     :  [IP address]
Netmask        :  [netmask]
MTU            :  [mtu]
Gateway        :  [gateway]
```

Figure 2.96.2-1 Output Format of the dhcpget Command

Table 2.96.2-1 describes the details about the items in Figure 2.96.2-1 Output Format of the dhcpget Command.

Table 2.96.2-1 Description of the Items in the Output Format

No.	Item	Description
1	[interface]	Dsiplays the interface name.
2	[On/Off]	On: DHCP setting is enabled (it has been set as the DHCP client) Off: DHCP setting is disabled (it has not been set as the DHCP client)
3	[(message1)]	If the DHCP setting is waiting for the reflection, the following message is output. (*1) (Settings are pending application to the system. (pending settings = <*On/Off*>))
4	[message2]	The following message is output. (*2) The settings that are pending application to the system are described below.
5	[IP address]	Displays IPv4 address of [interface]. (*2)
6	[netmask]	Displays netmask of [interface]. (*2)
7	[mtu]	Displays IPv4 address of [interface]. (*2)
8	[gateway]	Displays the gateway which goes through [interface].

*1: When changing the DHCP setting, this setting will be the pending status if it cannot communicate with the DHCP server. To cancel the pending status to reflect the setting to the system, use the dhcpset command. For the details of the dhcpset command, refer to Maintenance Tool "2.97 DHCP Setting of Network Interface (dhcpset)" (MNTT 02-5070).

*2: It is displayed until the DHCP setting changed from enabled to disabled status and the network information are reflected.

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2.96.3 Execution procedure

This subsection describes the procedure for executing the dhcpget command.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the dhcpget command. Figure 2.96.3-1, Figure 2.96.3-2 and Figure 2.96.3-3 show the execution examples.
When the message ID is shown, take measures with reference to Maintenance Tool "2.96.4 Command termination messages and action to be taken" (MNTT 02-5060).
After completing the measures, retry the operation.

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  On
```

Figure 2.96.3-1 Execution Example of the dhcpget Command (When the DHCP Setting is Enabled)

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  Off
```

Figure 2.96.3-2 Execution Example of the dhcpget Command (When the DHCP Setting is Disabled)

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  Off (Settings are pending application to the system. (pending settings = On))
```

Figure 2.96.3-3 Execution Example of the dhcpget Command (When the DHCP Setting is Waiting for Reflection)

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2.96.4 Command termination messages and action to be taken

When you execute the dhcpget command, messages might be displayed. Table 2.96.4-1 lists the action to be taken for each message ID.

Table 2.96.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM05038-E	The specified interface does not exist. (interface=<*interface*>)	There is no specified interface.	Specify the valid interface.
3	KAQM05042-E	The interface specification is invalid.	The specified value is incorrect.	Check the interface to be deleted and specify it again, and then execute the command again.
4	KAQM05048-E	An attempt to access the cluster management LU has failed.	Failed to access the cluster management LU.	Execute the "C.2.2 Determination Procedure when a Failure Occurred".
5	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource to be used in the required processing is used by another user.	Execute the command again after waiting for a while. If the error occurs again, collect the OS Log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
6	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
7	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter.	Specify the correct parameter and execute the command again.

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Table 2.96.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
8	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
10	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.
11	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.97 DHCP Setting of Interface (dhcpset)

This command executes the DHCP setting of the network interface. Note that this command should execute only for mng0.

NOTE:
- This is not supported in the cluster configuration.
- This command can be executed if the OS version is 4.1.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.97.1 Command line

This command uses the following command lines.

- To enable the DHCP setting of the network interface:
  dhcpset --on interface
- To disable the DHCP setting of the network interface:
  dhcpset --off -a ip_address -n netmask [-g gateway] interface
- To cancel the setting information which is waiting for the reflection to the system:
  dhcpset --cancel interface
- To display the command format on the standard output:
  dhcpset -h

Table 2.97.1-1 shows the description of each option.

Table 2.97.1-1 Command Options

No.	Option	Description	Remarks
1	--on	Specifies in case of enabling the DHCP client setting.	—
2	--off	Specifies in case of disabling the DHCP client.	—
3	--cancel	Specifies in case of cancelling the DHCP setting which is waiting for the reflection to the system.	—
4	-a <*ip_address*>	Specifies the fixed IPv4 address information set to the management port interface. IPv6 address cannot be specified.	—
5	-n <*netmask*>	Specify the netmask.	—
6	-g <*gateway*>	Specifies the IP address of the gateway which goes through or host name.	—
7	*interface*	Specifies the interface name to be set.	—
8	-h	Output the command format to the standard output.	—

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2.97.2 Execution procedure

This subsection describes the procedure for executing the dhcpset command.
When disabling the DHCP setting of the network interface, see (1) Disabling the DHCP setting.
To cancel the DHCP setting which is waiting for the reflection to the system, refer to Maintenance Tool "2.97.2 (2) Cancelling the DHCP Setting Waiting for the System Reflection" (MNTT 02-5090).

(1) Disabling the DHCP setting

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the dhcpget command and confirm that the current DHCP setting is enabled ("On").
For details, refer to Maintenance Tool "2.96 Displaying the DHCP Setting of the Network Interface (dhcpget)" (MNTT 02-5030).

(c) Execute the dhcpset command. Figure 2.97.2-1 shows the execution example.
When the message ID is shown, take measures with reference to Maintenance Tool "2.97.3 Command termination messages and action to be taken" (MNTT 02-5100).
After completing the measures, retry the operation.

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  On

$ sudo dhcpset --off -a 192.168.10.100 -n 255.255.255.0 -g 192.168.10.1 mng0
```

Figure 2.97.2-1 Execution Example of the dhcpset Command

(d) When executing the dhcpset command, the confirmation message (KAQM05271-Q) is displayed.
Then, input "y" to execute. To cancel the execution, enter "n".
When the message ID is shown, take measures with reference to Maintenance Tool "2.97.3 Command termination messages and action to be taken" (MNTT 02-5100).
After completing the measures, retry the operation.

```
$ sudo dhcpset --off -a 192.168.10.100 -n 255.255.255.0 -g 192.168.10.1 mng0
KAQM05271-Q Changes to the DHCP settings will be applied to the system. If you proceed, the node might
become disconnected. Are you sure you want to apply the changes to the DHCP settings? (y/n) y
```

Figure 2.97.2-2 Confirmation Message when Executing the dhcpset Command

(e) Execute the dhcpget command and confirm that the DHCP setting is disabled ("Off").
For details about how to log in to a node, refer to Maintenance Tool "2.96 Displaying the DHCP Setting of the Network Interface (dhcpget)" (MNTT 02-5030).

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  Off
```

Figure 2.97.2-3 Execution Example of the dhcpget Command

(f) Execute the iflist command and confirm the network information which has been set.
For details about how to log in to a node, refer to Maintenance Tool "2.4 Displaying the Network Status (iflist)" (MNTT 02-0200

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(2) Cancelling the DHCP Setting Waiting for the System Reflection

(a) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Execute the dhcpget command and confirm that the current DHCP setting is disabled ("Off") and the message to inform that the DHCP setting is waiting for the reflection to the system is not output.
For details about how to log in to a node, refer to Maintenance Tool "2.96 Displaying the DHCP Setting of the Network Interface (dhcpget)" (MNTT 02-5030).

(c) Execute the dhcpset command. Figure 2.97.2-4 shows the execution example.
When the message ID is shown, take measures with reference to Maintenance Tool "2.97.3 Command termination messages and action to be taken" (MNTT 02-5100).
After completing the measures, retry the operation.

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  Off (Settings are pending application to the system.( pending settings = On))

$ sudo dhcpset --cancel mng0
KAQM05277-I The DHCP settings that were pending application to the system were canceled.
```

Figure 2.97.2-4 Execution Example of the dhcpset Command

(d) Execute the dhcpget command and confirm that the DHCP setting is disabled ("Off") and the message to inform that the DHCP setting is waiting for the reflection to the system is not output.
For details about how to log in to a node, refer to Maintenance Tool "2.96 Displaying the DHCP Setting of the Network Interface (dhcpget)" (MNTT 02-5030).

```
$ sudo dhcpget mng0
Interface          :  mng0
DHCP               :  Off
```

Figure 2.97.2-5 Execution Example of the dhcpget Command

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2.97.3 Command termination messages and action to be taken

When you execute the dhcpset command, messages might be displayed. Table 2.97.3-1 lists the action to be taken for each message ID.

NOTE: Although KAQMxxxx-Q is a confirmation message, listed on the table as part of a termination message.

Table 2.97.3-1 Message IDs and Actions to be Taken (1/4)

No.	Message ID	Message	Description	Action
1	KAQM05002-E	A syntax error exists in the entered <*item name*>.	The entered content is invalid.	The displayed content is wrong. Enter the correct content and execute the command again.
2	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
3	KAQM05018-E	The specified host name (<*host name*>) cannot be resolved.	The specified host name cannot be resolved.	Specify a different host name that can be resolve the name, and then retry the operation.
4	KAQM05019-E	The specified gateway is not in the network.	The specified gateway does not exist in the network.	Specify a gateway of the same network.
5	KAQM05028-E	The specified routing entry already exists.	The specified routing settings already exist.	Request the system administrator to check the settings for routing in the cluster. Check if the same settings already exist and if the settings are synchronized within the cluster. If the same settings exist within the cluster, enter different routing settings. If unsynchronized settings exist within the cluster, delete the settings and execute the command again. For details about deleting the routing, request the system administrator or refer to Maintenance Tool "2.17 Deleting the Management Port Routing Information (mngroutedel)" (MNTT 02-1100).
6	KAQM05034-E	The specified IP address cannot be used because it is already in use. (IP address = <*IP address*>)	The specified IP address is already used.	Specify another IP address, and then retry the operation.

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Table 2.97.3-1 Message IDs and Actions to be Taken (2/4)

No.	Message ID	Message	Description	Action
7	KAQM05036-E	The network identified by the specified IP address and netmask cannot be used because it is already in use. (network address = <*network address*>)	The network identified by the specified IP address and netmask is already used.	Check the interface settings. Specify another IP address or netmask and execute the command again.
8	KAQM05038-E	The specified interface does not exist. (interface=<*interface*>)	There is no specified interface.	Specify the valid interface.
9	KAQM05041-E	The specified port is already being used.	Specified port is already in use.	Check the specified port.
10	KAQM05042-E	The interface specification is invalid.	The specified value is incorrect.	Check the interface to be deleted and specify it again, and then execute the command again.
11	KAQM05048-E	An attempt to access the cluster management LU has failed.	Failed to access the cluster management LU.	Execute the "C.2.2 Determination Procedure when a Failure Occurred".
12	KAQM05051-E	An attempt to restart the network has failed.	Failed to reboot the network.	Check that the OS of a node is not stopped and an error does not occur in the network. If the same error message is displayed after the retry, execute the procedure by referring to "C.2.2 Determination Procedure when a Failure Occurred".
13	KAQM05053-E	An attempt to set network information has failed.	Failed to set the network information.	Check that the resource group is offline and then execute the command again. For the checking method, refer to Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380). Also check that OS of a node is not stopped and an error does not occur in the network. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".
14	KAQM05064-E	The number of routing information registrations has reached the maximum.	The number of routing information registrations has reached the maximum.	Delete unnecessary routing information and execute the command again. For details about deleting the routing, refer to Maintenance Tool "2.17 Deleting the Management Port Routing Information (mngroutedel)" (MNTT 02-1100).

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Table 2.97.3-1 Message IDs and Actions to be Taken (3/4)

No.	Message ID	Message	Description	Action
15	KAQM05115-E	The format of the specified IP address is invalid. (IP address= ＜*IP address*＞)	The format of the specified IP address is invalid.	Use the correct IP address format.
16	KAQM05116-E	The format of the specified host name or IP address is invalid. (host name or IP address= <*host name or IP address*>)	The format of the specified host name or IP address is invalid.	Use alphanumeric characters, period (.), and hyphen (-) (the first must be an alphabet and the last must by an alphanumeric character) or the IP address format.
17	KAQM05119-E	An attempt to acquire the resource group status has failed.	Hardware failure may have occurred.	Execute the "C.2.2 Determination Procedure when a Failure Occurred".
18	KAQM05129-E	The resource group status is invalid.	Resource group is not the status of Online/No error, Offline/No error or Online Maintenance/No error.	Try again after confirming the resource group status. For the checking method, refer to Maintenance Tool "2.63 Resource group Status Display (rgstatus)" (MNTT 02-3380).
19	KAQM05221-E	The same IP address was specified more than once. (IP address = <*IP address*>)	Specified IP address is duplicated.	Specify the IP address with avoiding the duplication.
20	KAQM05267-E	The specified interface cannot use DHCP because the interface is configured with an IPv6 address.	IPv6 address set interface cannot use DHCP.	Check that the specified interface is correct.
21	KAQM05271-Q	Changes to the DHCP settings will be applied to the system. If you proceed, the node might become disconnected. Are you sure you want to apply the changes to the DHCP settings? (y/n)	—	Input "y" or "n".
22	KAQM05273-I	The node might be disconnected because the network settings were changed. If the node is disconnected, wait a few minutes, and then log in again.	Connection with the node may be disconnected as the network setting has been changed.	Log in again after a while.
23	KAQM05274-E	The specified interface has DHCP settings that are pending application to the system. Settings that differ from the pending settings cannot be specified.	Process has suspended because the value which is different from the setting information held to reflect to the system has been specified.	Check the DHCP setting. If you want to cancel the DHCP setting information which was held to reflect to the system, specify the --cancel option.
24	KAQM05275-E	Failed to change the DHCP settings.	There is a problem with the communication with the DHCP server or the setting on the DHCP server.	Confirm with the system administrator whether the setting of the DHCP server is correct and the DHCP server is operating normally. Retry after checking that no failure occurs in the network. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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Table 2.97.3-1 Message IDs and Actions to be Taken (4/4)

No.	Message ID	Message	Description	Action
25	KAQM05277-I	The DHCP settings that were pending application to the system were canceled.	—	—
26	KAQM05280-I	The DNS settings changed. You must restart the OS.	—	—
27	KAQM05283-E	The specified interface is not using DHCP.	DHCP is not used in the specified interface.	Check the setting of the specified interface.
28	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	The resource to be used in the required processing is used by another user.	Execute the command again after waiting for a while. If the error occurs again, collect the OS Log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
29	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
30	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	A syntax error exists in the parameter.	Specify the correct parameter and execute the command again.
31	KAQM14133-E	The command cannot be used because a cluster configuration is not defined.	The command started in the status that the cluster is not configured.	Ask the system administrator to configure the cluster, and then execute the command again.
32	KAQM14134-E	An error occurred in the shared processing of commands. (Error = <*error*>)	An error occurred in the shared processing of commands.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
33	KAQM14136-I	Usage:<*command-syntax*>	The command format is output.	—
34	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.
35	KAQM14150-E	An error occurred in the system.	A system error occurred.	Collect the OS log, and send it to the support center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.98 Displaying Settings of I/O Scheduler and Reloading Settings (luioschedulectl)

This command displays the settings of an I/O scheduler or reload the settings.

NOTE: This command can be executed if the OS version is 5.0.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.98.1 Command line

This command uses the following command lines.

- To displays the settings of the I/O scheduler:
  luioschedulectl
- To reload the settings of the I/O scheduler:
  luioschedulectl --reload
- To set an I/O scheduler (for system administrators):
  luioschedulectl --set {cfq|noop} *dev-name*[,*dev-name...*]
- To display the command format on the standard output:
  luioschedulectl -h

Table 2.98.1-1 shows the description of each option.

Table 2.98.1-1 Command Options

No.	Option	Description	Remarks
1	--reload	Reloads the settings of the I/O scheduler to all device files that the OS recognizes.	—
2	--set	Sets an I/O scheduler on the specified device files. cfq : Setting CFG scheduler noop : Setting NOOP scheduler	This option is for system administrators.
3	dev-name	Specifies the device file name in the format of luXX. (XX are hexadecimal numbers within the ranges shown below.) - Cluster configuration: 0000 - 03FF - Single node configuration: 00 - FF To specify two or more device files, separate the device file names by a comma (,) in the format of "luXX, luXX". The maximum number of device files that can be specified is 256. A comma cannot be used at the beginning or end of a device file name. The same device file name cannot be assigned to different files if multiple device files are specified.	This option is for system administrators. Maintenance personnel must not use this option.
4	-h	Display the command format to the standard output.	At the time of output, KAQM14136-I is displayed.

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2.98.2 Output format

The output format for luioschedulectl command execution is shown in Figure 2.98.2-1 Output Format of the luioschedulectl Command.

```
Output format of luioschedulectl

Device file      Configuration      Active
[Device file]    [Configuration]    [Active]
```

Figure 2.98.2-1 Output Format of the luioschedulectl Command

Table 2.98.2-1 describes the details about the items in Figure 2.98.2-1 Output Format of the luioschedulectl Command.

Table 2.98.2-1 Description of the Items in the Output Format

No.	Item	Description
1	*Device file*	Displays all device file names that the OS recognizes one line at a time. If the values of [*Configuration*] and [*Active*] are different, “*” is added at the beginning of the device file name. (e.g., *lu01)
2	*Configuration*	The settings of the I/O scheduler of [*Device file*] are displayed by using “cfg” or “noop”.
3	*Active*	The settings of the I/O scheduler currently applied to [*Device file*] are displayed by using cfg”, “noop”, or “unknown.” If the settings cannot be acquired normally, “unknown” is output.

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2.98.3 Execution procedure

This subsection describes the procedure for reloading the settings of an I/O scheduler.

Execute the luioschedulectl command on node0 and then node1.
First, execute the following steps from (1) to (4) for node0, and then repeat the same operation for node1.

(1) Log in to the execution node via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(2) Execute the luioschedulectl command to reload the settings of the I/O scheduler.
When the message ID is shown, take measures with reference to Maintenance Tool "2.98.4 Command termination messages and action to be taken" (MNTT 02-5170).

```
$ sudo luioschedulectl --reload
```

Figure 2.98.3-1 Execution Example of the luioschedulectl Command (Reloading)

(3) Execute the luioschedulectl command to verify the reloading status of the I/O scheduler.
When the message ID is shown, take measures with reference to Maintenance Tool "2.98.4 Command termination messages and action to be taken" (MNTT 02-5170).

```
$ sudo luioschedulectl
```

Figure 2.98.3-2 Execution Example of the luioschedulectl Command (Verification)

(4) Verify that "*" is not displayed at the beginning of the device file name as shown in Figure 2.98.3-3.

```
$ sudo luioschedulectl
 Device file    Configuration    Active
 lu00           cfq              cfq
 lu01           noop             noop
 lu02           noop             noop
 lu03           cfq              cfq
 lu04           noop             noop
```

Figure 2.98.3-3 Example of Success in Reloading

If "*" is displayed at the beginning of the device file name as shown in Figure 2.98.3-4, wait for a while, execute step (2) and (3) again, and then verify that "*" is no longer displayed. If it is still displayed somehow, collect the OS Log and send it to the Support Center.
To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

```
$ sudo luioschedulectl
 Device file    Configuration    Active
 lu00           cfq              cfq
 lu01           noop             noop
*lu02           noop             unknown
*lu03           cfq              unknown
*lu04           noop             cfq
```

Figure 2.98.3-4 Example of Unsuccess in Reloading

(5) Execute the steps from (1) to (4) for node1 after executing these steps for node0.

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2.98.4 Command termination messages and action to be taken

When you execute the luioschedulectl command, messages might be displayed. Table 2.98.4-1 lists the action to be taken for each message ID.

Table 2.98.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14105-E	Some of the resources to be used for the requested processing are being used by another user.	Some of the resources to be used for the requested processing are being used by another user.	Execute the command again after a while. If the error occurs again, collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
2	KAQM14129-E	An error occurred in the cluster management LU or a system file, or access to the cluster management LU is being suppressed because a resource group was forcibly failed over.	An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred". This message displayed when the OS version is 4.2.0-XX or earlier. When the OS version is 3.2.3-XX or earlier, the latter half of the message will not be displayed.
		The operation could not be performed because access to the cluster management LU is being suppressed.	The OS might not have finished starting. If the OS is running, one of the following might apply: An error occurred in the Cluster Management LU or a system file, or the Cluster Management LU is blocked. Or the access to the Cluster Management LU is being suppressed because a resource group was forcibly failed over.	Execute the procedure described in "C.2.2 Determination Procedure when a Failure Occurred".
3	KAQM14131-E	A syntax error exists in the parameter (*<parameter>*).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
4	KAQM14132-E	No license is set to allow use of basic functionality.	No license is set to allow use of basic functionality.	Set a license. Ask the system administrator the setting or set it by executing the licenseset command. For how to set a license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
5	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again.
6	KAQM14134-E	An error occurred in the shared processing of commands. (Error=*<error>*)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
7	KAQM14136-I	Usage:*<command-syntax>*	The command format is output.	—

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Table 2.98.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
8	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify the correct parameters. Then execute the command again.
9	KAQM33008-E	A system error has occurred.	A system error has occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)"(MNTT 02-1300).
10	KAQM33054-E	Configuration of the I/O scheduler setting failed.	The setting of the I/O scheduler failed.	Verify the FC path status and whether there is no problem in the connection to the disk array. If there is no problem, execute the command again. If the error occurs again, collect the OS Log, and send it to the Support Center. To collect the OS log, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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2.99 Check the IP address conflict of the Management port (arping)

This command check whether the IP address conflict of the Management port with other devices connected to the management LAN.

NOTE: This command can be executed if the OS version is 3.1.0-00 or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

2.99.1 Command line

This command uses the following command lines.

- To check the IP address conflict of Management port:
  arping -D -w 5 -I mng0-br *destination*

- To display the command format on the standard output:
  arping -h

Table 2.99.1-1 Command Options

No.	Option	Description	Remarks
1	-D	Operate in the mode confirming whether specified IP address was already used at the other interface.	—
2	-w	Specify time-out value (sec.) of the command execute time. Specify 5 seconds herein.	—
3	-I	Specifies the interface to be used to send ARP REQUEST. Specify interface (mng0-br) that IP address to confirm whether it is conflicted.	—
4	*destination*	Specifies the target IP address. Specify IP address of the management port herein.	—
5	-h	Output the command format to the standard output.	—
6	-f	Stop the sending ARP REQUEST, when ARP REPLY was received.	Do not use.
7	-q	Quiet output. Nothing is displayed.	
8	-b	Send only MAC level broadcasts.	
9	-A	Using ARP REQUEST, update forcibly ARP caches of the target IP address.	
10	-U	Using ARP REPLY, update forcibly ARP caches of the target IP address.	
11	-V	Output version of the program to the standard output.	
12	-c	Specifies number of times to send the ARP REQUEST.	
13	-s	Specifies the IP address to send ARP REQUEST.	

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2.99.2 Execution procedure

The following shows the procedure to check whether IP address of the management port conflicts with other devices.

In the case of the cluster configuration, execute the command on the node to which management port confirming that there is conflict belongs.

(1) Log in to the node to be confirmed the conflict via ssh from the maintenance PC.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(2) Execute mngiflist command and check the IP address of the management port for checking the conflict.
For details about the mngiflist command, refer to Maintenance Tool “2.11 Displaying the Management Port Information (mngiflist)” (MNTT 02-0800).
Confirm the IP address setting, and write down the IP address.

(3) Confirm MAC address of the management port.
Execute “ip addr show mng0-br”.
The address information is displayed as shown Figure 2.99.2-1. Confirm IP address is same that of writing down in the step (2).
Write down the MAC address and proceed to step (4).

```
$ ip addr show mng0-br
11: mng0-br: <BROADCAST,MULTIC                    _UP> mtu 1500 qdisc noqueue state UNKNOWN
    link/ether 8c:89:a5:5f:25:33 brd ff:ff:ff:ff:ff:ff
    inet 10.213.137.197/22 brd 10.213.139.255 scope global mng0-br
    inet 10.213.137.199/22 brd                    pe global secondary mng0-br:0
    inet6 fe80::8e89:a5ff:fe5f:25
        valid_lft forever preferred_lft forever
$
```

MAC address

IP address

Figure 2.99.2-1 Execution Example to confirm MAC address

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(4) Execute arping command.“arping -D -w 5 -I mng0-br <IP address of the management port >”

(5) Confirm whether conflict of IP address occurred from result of the arping command execution.
In the case of the value of “Received” is “0” as Figure 2.99.2-2, there is no conflict of the management IP address.
When the value of “Received” is more than “1” as Figure 2.99.2-3, confirm displayed MAC address.
In the case the MAC address except MAC address of the management port that wrote down in step(3) are displayed, there is conflict between the interface of which displayed MAC address and the management IP address.

```
$ arping -D -w 5 -I mng0-br 10.213.137.197
ARPING 10.213.137.197 from 0.0.0.0 mng0-br
Sent 6 probes (6 broadcast(s))
Received 0 response(s)
$
```

Figure 2.99.2-2 Execution Example of confirming IP address conflict . [there is no conflict]

```
$ arping -D -w 5 -I mng0-br 10.213.137.197
ARPING 10.213.137.197 from 0.0.0.0 mng0-br
Unicast reply from 10.213.137.197 [00:25:5C:3D:15:3C]  0.601ms
Sent 1 probes (1 broadcast(s))
Received 1 response(s)
$
```

MAC address

Figure 2.99.2-3 Execution Example of confirming IP address conflict . [there is conflict]

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2.100 Settings of enabling/disabling the secure shell (secureshellfullctl)

This command configures and displays the settings of enabling/disabling the secure shell (that confines the command executable with 'nasroot' account only to some commands).

NOTE:
- Do not execute the setting by this command unless specifically instructed.
- This command can be executed if the OS version is from 5.4.1-XX to 5.7.0-XX, or if the OS version is 6.1.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
- In the cluster configuration, confirm the node booted, not only for the node that you execute this command, but also for the opposite node. The command fails if the nodes have not booted.
- The setting by this command is applied to the 'nasroot' account that log in after executing this command. It is not applied to the 'nasroot' account that has logged in before executing this command.

2.100.1 Command line

This command uses the following command lines.

- To display the settings of secure shell:
  secureshellfullctl

- To enable/disable the secure shell:
  secureshellfullctl --enable | --disable

- To display the command format on the standard output:
  secureshellfullctl -h

Table 2.100.1-1 Command Options

No.	Option	Description	Remarks
1	--enable	Enable the secure shell.	—
2	--disable	Disable the secure shell.	—
3	-h	Output the command format to the standard output.	—

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2.100.2 Output format

The output format for secureshellfullctl command execution is shown in Figure 2.100.2-1 Output Format of the secureshellfullctl Command.

```
Output format of secureshellfullctl

[setting status]
```

Figure 2.100.2-1 Output Format of the secureshellfullctl Command

Table 2.100.2-1 describes the details about the items in Figure 2.100.2-1 Output Format of the secureshellfullctl Command.

Table 2.100.2-1 Description of the Items in the Output Format

No.	Option	Description	Remarks
1	[setting status]	Enabled : secure shell confine the command. Disabled: secure shell do not confine the command.	—

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2.100.3 Execution procedure

This subsection describes the procedure for executing the secureshellfullctl command.

To enable the secure shell, refer to "(1) Enabling the secure shell".

To disable the secure shell, refer to Maintenance Tool "2.100.3 (2) Disabling the secure shell" (MNTT 02-5250).

NOTE:
- Do not execute the setting by this command unless specifically instructed.
- In the cluster configuration, because the settings of the secure shell synchronizes in both nodes, perform the confirmation and setting on one node only.

(1) Enabling the secure shell

(a) Log in to the node to be confirmed the conflict via ssh from the maintenance PC. In the cluster configuration, without instructions from the Technical Support Center, log in to node0.
For details about how to log in to a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).

(b) Confirm that secure shell is disabled by executing secureshellfullctl command.
Confirm "Disabled" is displayed as followed Figure 2.100.3-1.
When the message ID is shown, take measures with reference to Maintenance Tool "2.100.4 Command termination messages and action to be taken" (MNTT 02-5260).

```
$ sudo secureshellfullctl
Disabled
$
```

Figure 2.100.3-1 Execution Example of the secureshellfullctl Command (Confirmation of disabled)

(c) Enable the secure shell by executing secureshellfullctl command.
When the message ID is shown, take measures with reference to Maintenance Tool "2.100.4 Command termination messages and action to be taken" (MNTT 02-5260).

```
$ sudo secureshellfullctl --enable
$
```

Figure 2.100.3-2 Execution Example of the secureshellfullctl Command (Enabling the secure shell)

(d) Confirm that secure shell is enabled by executing secureshellfullctl command.
Confirm "Enabled" is displayed as followed Figure 2.100.3-3.
When the message ID is shown, take measures with reference to Maintenance Tool "2.100.4 Command termination messages and action to be taken" (MNTT 02-5260).

```
$ sudo secureshellfullctl
Enabled
$
```

Figure 2.100.3-3 Execution Example of the secureshellfullctl Command (Confirmation of enabled)

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(2) Disabling the secure shell

NOTE: If the secure shell is set “Disabled”, it is usually necessary to set back the secure shell to “Enabled”.
Before Starting operation, confirm the schedule of setting back to enabled to Technical Support Center.

(a) Log in to the node to be confirmed the conflict via ssh from the maintenance PC. In the cluster configuration, without instructions from the Technical Support Center, log in to node0.
For details about how to log in to a node, refer to Maintenance Tool “1.3.2 Logging in to a node for executing commands” (MNTT 01-0200).

(b) Confirm that secure shell is enabled by executing secureshellfullctl command.
Confirm “Enabled” is displayed as followed Figure 2.100.3-4.
When the message ID is shown, take measures with reference to Maintenance Tool “2.100.4 Command termination messages and action to be taken” (MNTT 02-5260).

```
$ sudo secureshellfullctl
Enabled
$
```

Figure 2.100.3-4 Execution Example of the secureshellfullctl Command (Confirmation of enabled)

(c) Disable the secure shell by executing secureshellfullctl command.
When the message ID is shown, take measures with reference to Maintenance Tool “2.100.4 Command termination messages and action to be taken” (MNTT 02-5260).

```
$ sudo secureshellfullctl --disable
$
```

Figure 2.100.3-5 Execution Example of the secureshellfullctl Command (Disabling the secure shell)

(d) Confirm that secure shell is disabled by executing secureshellfullctl command.
Confirm “Disabled” is displayed as followed Figure 2.100.3-6.
When the message ID is shown, take measures with reference to Maintenance Tool “2.100.4 Command termination messages and action to be taken” (MNTT 02-5260).

```
$ sudo secureshellfullctl
Disabled
$
```

Figure 2.100.3-6 Execution Example of the secureshellfullctl Command (Confirmation of disabled)

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2.100.4 Command termination messages and action to be taken

When you execute the secureshellfullctl command, messages might be displayed. Table 2.100.4-1 lists the action to be taken for each message ID.

Table 2.100.4-1 Message IDs and Actions to be Taken (1/2)

No.	Message ID	Message	Description	Action
1	KAQM14131-E	A syntax error exists in the parameter (<*parameter*>).	An error exists in the parameter.	Specify the correct parameter and execute the command again.
2	KAQM14132-E	No license is set to allow use of basic functionality.	The license to use basic function is not set.	Set the license. Either request the system administrator to do it or execute the setting by the command. For the method of setting the license, refer to Maintenance Tool "2.32 Setting a License (licenseset)" (MNTT 02-1930).
3	KAQM14133-E	The command cannot be used because a cluster configuration or system management IP address is not defined.	The command cannot be used because a cluster configuration or system management IP address is not defined.	Ask the system administrator to configure the cluster, and then execute the command again.
4	KAQM14134-E	An error occurred in the shared processing of commands. (Error=<*error*>)	An error occurred in the shared processing of commands.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
5	KAQM14136-I	Usage: command-syntax	Displaying the command format.	—
6	KAQM14138-E	There are too many or too few parameters.	There are too many or too few parameters.	Check the command format and specify correct parameters. Then execute the command again.
7	KAQM05010-E	An internal error occurred.	An internal error occurred.	Collect the OS log and send it to the Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).

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Table 2.100.4-1 Message IDs and Actions to be Taken (2/2)

No.	Message ID	Message	Description	Action
8	KAQM05329-E	An attempt to configure the security enhancement functionality failed.	An attempt to configure the security enhancement functionality failed.	Execute the command again. If the error occurred again, collect the OS log and send it to the Technical Support Center. For details about how to collect OS logs, refer to Maintenance Tool "2.19 Collecting Logs (oslogget)" (MNTT 02-1300).
9	KAQM05030-E	In the cluster, nodes that cannot synchronize exist.	An unsynchronized node exists in the cluster.	Check the following: 1. Check if the interface or routing settings affect the network setting of the management port. For the checking method, refer to the mngiflist command (Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800)) and the mngroutelist command (Maintenance Tool "2.15 Displaying the Management Port Routing Information (mngroutelist)" (MNTT 02-0960)). 2. Check if the OS of either node in the cluster is stopped. For the checking method, refer to the clstatus command (Maintenance Tool "2.2 Displaying the Cluster Status (clstatus)" (MNTT 02-0040)). 3. Verify the status of each port with the hwstatus command, "B.3.1 Displaying the Hardware Status (hwstatus)" to check if a network failure has occurred. If the error occurs again, there may be trouble with connection to the NIS server, DNS server, or LDAP server. Request the system administrator to cancel the settings of each server and then execute the command again. If the same error occurs after you execute the command again, execute the "C.2.2 Determination Procedure when a Failure Occurred".

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Chapter 3 Appendix A Cluster Operation by the Maintenance Personnel

When the system administrator is absent while in the process of maintaining, the maintenance personnel needs to contact to system administrator and get the permission from him/her to execute the cluster operation.
The execution procedures for each cluster operation are described in the following.
Note that this procedure can be performed if the OS version is 2.2.1-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).

3.1 Failover and Node Termination to Execute the OS stop or the OS reboot

The procedure is different depending on the operation form.
In addition, refer to Maintenance Tool "3.4 Operation determination of the Physical node" (MNTT 03-0110) and determine which of the operation forms is relevant.
Refer to Maintenance Tool "3.1.1 Operation only in the Physical node" (MNTT 03-0001) in case of the operation only in the Physical node.

In case of the OS version earlier than 3.1.0-XX, the operation in the Virtual Server is not executed, and therefore refer to Maintenance Tool "3.1.1 Operation only in the Physical node" (MNTT 03-0001).

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3.1.1 Operation only in the Physical node

The maintenance personnel should check the cluster status before stopping or rebooting the OS, and if the resource group is running in the target node, the maintenance personnel needs to perform failover the resource group to the other side node to make stop (INACTIVE) the target node.
The following shows the procedure of cluster operation to perform stopping or rebooting the OS.
This is an operation and confirmation from the specific node, which is different from the operation with HFSM by the system administrator.
In this procedure, the maintenance target node is assumed as node1.
If the maintenance target is node0, replace the word of node1 with node0, and node0 with node1. About the cluster status confirmation procedure with clstatus command, an example shows in the case of logging into the node0. However, if it is log into node1, please note that the node status is displayed in the order of node1 to node0.

(1) Log into node0 via ssh from the maintenance PC. For details about how to log into a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).
Be sure to log into the node on the other side of the maintenance target node.

(2) Execute clstatus command as shown in Figure 3.1.1-1, and check the items described in Table 3.1.1-1. The number of #1 to #4 in the table is linked with the number of 1 to 4 in the figure.

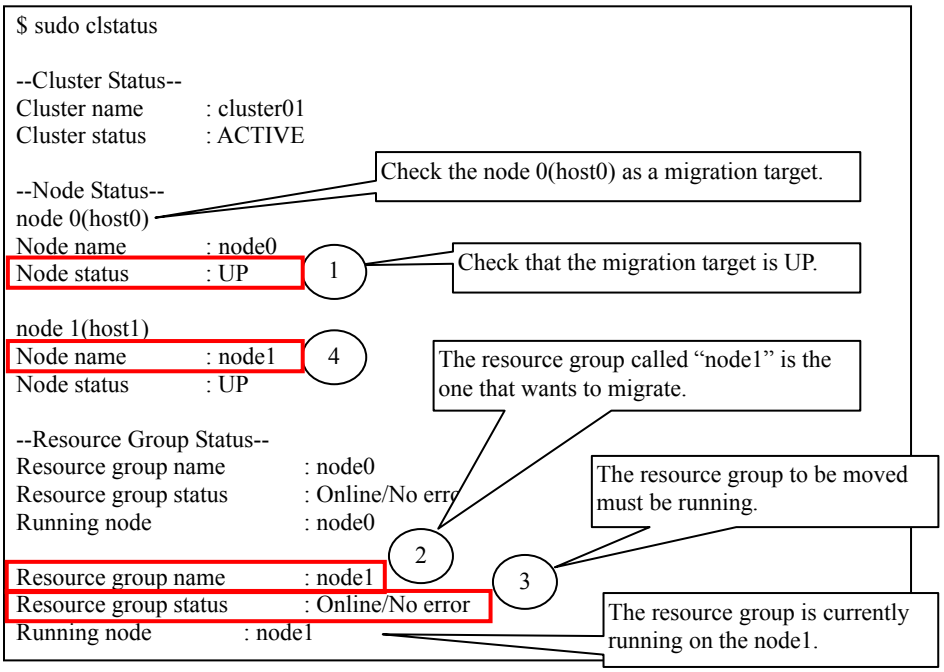

Figure 3.1.1-1 Execution Example of the clstatus Command

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Table 3.1.1-1 Items to be Confirmed for the Failover or the node Termination

#	Items to be confirmed	The contents of confirmation in this procedure
1	Check that the “Node status” of the node to be moved the resource group is “UP”.	Check the “Node status” on the side of node0.
2	Write down the “Resource group name” of the resource group to be moved.	Write down the “Resource group name” that is running on the side of node1. Here is “node1”.
3	Check that the “Resource group status” of the resource group to be moved is “Online/No error” or “Online Maintenance/No error”.	Check the “Resource group status” which is running on the side of node1.
4	Write down the “Node name” of the node to be stopped.	Write down the “Node name” on the side of node1. Here is “node1”.

(3) The resource group is moved to the other side node. Execute rgmove command by putting the “Resource group name” that is written down in the #2 of Table 3.1.1-1 in the step (2) as an argument, as shown in Figure 3.1.1-2. The execution confirmation message of rgmove command (KAQM06136-Q) is displayed. Enter “y” to start execution. The execution node of the resource group is changed. To cancel the execution, enter “n”. When a message ID is displayed, refer to Maintenance Tool “2.54.3 Command termination messages and action to be taken” (MNTT 02-3040).

```
$ sudo rgmove node1
KAQM06136-Q Performing this operation will temporarily stop the services. Are you sure
you want to change the execution node of the resource group? (y/n) y
```

Figure 3.1.1-2 Execution Example of the rgmove Command

(4) Execute clstatus command again, and check that the “Running node” circled with a thick-frame in Figure 3.1.1-3 is changed to “node0”.

```
$ sudo clstatus

<snip>

--Resource Group Status--
Resource group name      : node0
Resource group status    : Online/No error
Running node             : node0

Resource group name      : node1
Resource group status    : Online/No error
Running node             : node0
```

The resource group is moved, and the resource group called “node1”that was running on the node1 is running on the node0 now.

Figure 3.1.1-3 Execution Example of the clstatus Command (after executing rgmove command)

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(5) Execute ndstop command. Put the "Node name" that is written down in #4 of Table 3.1.1-4 in the step (2) as an argument as shown in Figure 3.1.1-4, to stop the node of maintenance target. The execution confirmation message of ndstop command (KAQM06134-Q) is displayed. Enter "y" to start execution. The stopping process of the node is executed. To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.51.3 Command termination messages and action to be taken" (MNTT 02-2840).

```
$ sudo ndstop node1
KAQM06134-Q Performing this operation might stop the services on node. Are you sure
you want to stop the node? (y/n) y
```

Figure 3.1.1-4 Execution Example of the ndstop Command

(6) Execute clstatus command again, and check that the "Node status" circled with a thick-frame in Figure 3.1.1-5 is changed to "INACTIVE". The stopping or rebooting OS become available in the state as shown in Figure 3.1.1-5.

```
$ sudo clstatus

--Cluster Status--
Cluster name      : cluster01
Cluster status    : ACTIVE

--Node Status--
node 0(host0)
Node name         : node0
Node status       : UP

node 1(host1)
Node name         : node1
Node status       : INACTIVE

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node0

Resource group name       : node1
Resource group status     : Online/No error
Running node              : node0
```

Figure 3.1.1-5 Execution Example of the clstatus Command (after executing rgmove and ndstop commands)

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3.1.2 Operation only in the Virtual Server

HDI does not support Virtual Server.

3.1.3 Operation both in the Physical node and in the Virtual Server

HDI does not support Virtual Server.

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3.2 Failback and Start of Node after Starting the OS

The procedure is different depending on the operation form.
In addition, refer to Maintenance Tool “3.4 Operation determination of the Physical node” (MNTT 03-0140) and determine which of the operation forms is relevant.
Refer to Maintenance Tool “3.2.1 Operation only in the Physical node” (MNTT 03-0040) in case of the operation only in the Physical node.

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3.2.1 Operation only in the Physical node

The maintenance personnel should check the cluster status after starting the node with the power source button of the node to ON, and must start (UP) the target node and return the resource group that is running on the other side node to the own node (failback).
The following shows the procedures of cluster operation after the OS is started.
This is an operation and confirmation from the specific node, which is different from the operation with HFSM by the system administrator.
In this procedure, the node of maintenance target is assumed as node1.
If the maintenance target is node0, replace the word of node1 with node0, and node 0 with node1. About the cluster status confirmation procedure with clstatus command, an example shows in the case of logging into the node0. However, if it is log into node1, please note that the node status is displayed in the order of node1 to node0.

(1) Log into node0 via ssh from the maintenance PC. For details about how to log into a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).
Be sure to log into the node on the other side of the maintenance target node.

(2) Execute clstatus command as shown in Figure 3.2.1-1, and check the items described in Table 3.2.1-1. The number of #1 to #5 in the table is linked with the number of 1 to 5 in the figure.
Check that the "Node status" of the node of maintenance target circled with a thick-frame is "INACTIVE", and the "Running node" is running in the other side node.

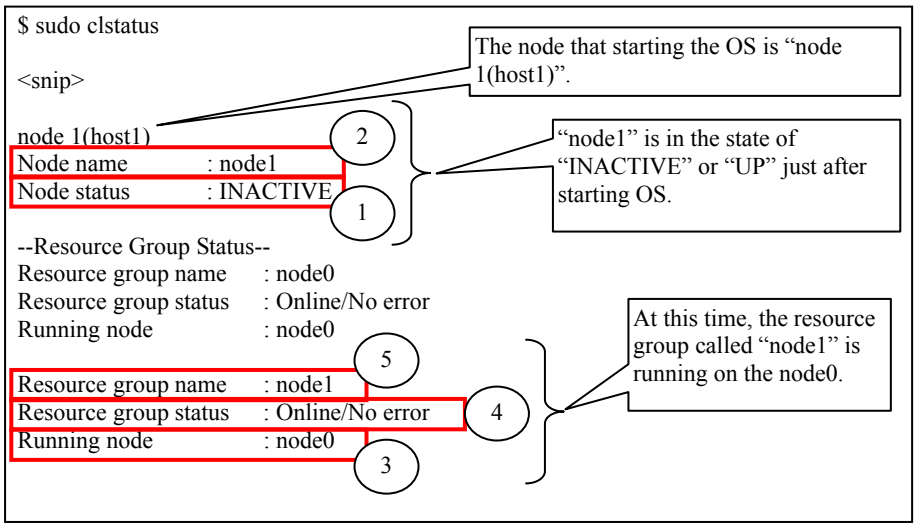

Figure 3.2.1-1 Execution Example of the clstatus Command (After the OS is started)

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Table 3.2.1-1 Items to be Confirmed for the node Startup and Failback

#	Items to be confirmed	The contents of confirmation in this procedure
1	Check the “Node status” of the node of starting the OS is “INACTIVE” or “UP”.	Check the “Node status” on the side of node1.
2	Write down the “Node name” of the starting the node.	Write down the “Node name” on the side of node1. Here is “node1”.
3	Check that the resource group to be moved is running on the other side node.	Check that “Resource group name” and “Running node” is different.
4	Check that the “Resource group status” of the resource group to be moved is “Online/No error” or “Online Maintenance/No error”.	Check the “Resource group status” which is running on the side of node1.
5	Write down the “Resource group name” of the resource group to be moved.	Write down the “Resource group name” that is running on the side of node0.

(3) Start the maintenance target node. Execute the ndstart command by putting the “Node name” that is written down in the #2 of Table 3.2.1-1 in the step (2) as an argument, as shown in Figure 3.2.1-2. However, if the “Node status” checked at the step (2) is “UP”, the node is already started. Therefore, proceed to step (5). When a message ID is displayed, refer to Maintenance Tool “2.50.3 Command termination messages and action to be taken” (MNTT 02-2780).

```
$ sudo ndstart node1
```

Figure 3.2.1-2 Execution example of ndstart Command

(4) Execute clstatus command again, and check that the “Node status” circled with a thick-frame in Figure 3.2.1-3 is changed to “UP”.

```
$ sudo clstatus

< Partially omitted >

--Node Status--
node 0(host0)
Node name      : node0
Node status    : UP

node 1(host1)
Node name      : node1
Node status    : UP

<snip>
```

Figure 3.2.1-3 Execution Example of the clstatus Command (after executing ndstart command)

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(5) Execute rgmove command by putting the "Resource group name" that is written down in #5 of 3.2.1-1 in the step (2) as an argument as shown in Figure 3.2.1-4 to migrate the resource group to the node. The execution confirmation message of rgmove command (KAQM06136-Q) is displayed. Enter "y" to start execution. The execution node of the resource group is changed. To cancel the execution, enter "n".
When a message ID is displayed again, refer to Maintenance Tool "2.54.3 Command termination messages and action to be taken" (MNTT 02-3040).

```
$ sudo rgmove node1
KAQM06136-Q Performing this operation will temporarily stop the services. Are you sure
you want to change the execution node of the resource group? (y/n) y
```

Figure 3.2.1-4 Execution Example of the rgmove Command

(6) Execute clstatus command again, and check that the "Resource group name" and the "Running node" circled with thick-frames in Figure 3.2.1-5 are matched.

```
$ sudo clstatus

--Cluster Status--
Cluster name          : cluster01
Cluster status        : ACTIVE

--Node Status--
node 0(host0)
Node name : node0
Node status: UP

node 1(host1)
Node name : node1
Node status: UP

--Resource Group Status--
Resource group name   : node0
Resource group status : Online/No error
Running node          : node0

Resource group name   : node1
Resource group status : Online/No error
Running node          : node1
```

The resource group called "node1" of the migration target is running on the node1 by the failback operation.

Figure 3.2.1-5 Execution Example of the clstatus Command (after executing ndstart and rgmove)

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3.2.2 Operation only in the Virtual Server

HDI does not support Virtual Server.

3.2.3 Operation both in the Physical node and in the Virtual Server

HDI does not support Virtual Server.

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3.3 The Operation Accompanying Forced Stop of the Resource group

The procedure is different depending on the operation form.
In addition, refer to Maintenance Tool “3.4 Operation determination of the Physical node” (MNTT 03-0140) and determine which of the operation forms is relevant.
Refer to Maintenance Tool “3.3.1 Operation only in the Physical node” (MNTT 03-0070) in case of the operation only in the Physical node.

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3.3.1 Operation only in the Physical node

If the start or stop of the resource group failed because the operation of failover/failback failed, the maintenance personnel needs to perform the forced stopping of the resource group.
The following shows the procedures of cluster operation accompanying a forced stop of the resource group.
This is an operation and confirmation from the specific node, which is different from the operation with HFSM by the system administrator.
In this procedure, the maintenance target node is assumed as node1.
If the maintenance target is node0, replace the word of node1 with node0, and node0 with node1. About the cluster status confirmation procedure with clstatus command, an example shows in the case of logging into the node0. However, if it is log into node1, please note that the node status is displayed in the order of node1 to node0.

(1) Log into node0 via ssh from the maintenance PC. For details about how to log into a node, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).
Be sure to log into the node on the other side of the maintenance target node.

(2) Execute clstatus command as shown in Figure 3.3.1-1, and check the items described in Table 3.3.1-1. Check that the "Resource group status" circled with a thick-frame of the node of maintenance target is "Online/srmd executable error".

```
$ sudo clstatus

--Cluster Status--
Cluster name      :  cluster01
Cluster status    : ACTIVE

--Node Status--
node 0(host0)
Node name         : node0
Node status       : UP

node 1(host1)
Node name         : node1
Node status       : UP

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node0

Resource group name       : node1
Resource group status     : Online/ srmd executable error
Running node              : node0
```

A resource group called "node1" exists on the node0, but it is in the state of abnormal by a failure.

Figure 3.3.1-1 Execution Example of the clstatus Command

Table 3.3.1-1 Items to be Confirmed for Resource group Forced Termination

#	Items to be confirmed	The contents of confirmation in this procedure
1	Error information of the "Resource group status" is other than "~/No error".	Check that the "Resource group status" is "Online/srmd executable error".
2	Write down the "Resource group name" to be stopped forcibly.	Write down the "Resource group name" of the resource group that is running on the node0. Here is"node1".
3	Write down the "Running node" to be stopped forcibly.	Confirm that the resource group which must be forcibly stopped is a running node and a node which is currently logged in to.

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(3) Forcibly stop the resource group where a failure occurred. Execute rgstop command by putting the "Resource group name" that is written down in the #2 of Table 3.3.1-1 in the step (2) and "-f" option as arguments, as shown in Figure 3.3.1-2. The operation of resource group stopping is executed. To cancel the execution, enter "n".
When a message ID is displayed, refer to Maintenance Tool "2.53.3 Command termination messages and action to be taken" (MNTT 02-2980).

```
$ sudo rgstop -f node1
KAQM06135-Q Performing this operation will stop the services.
Are you sure you want to stop the resource group? (y/n) y
```

Figure 3.3.1-2 Execution Example of the rgstop Command (forced stop)

(4) Execute clstatus command again, and check that the "Resource group status" circled with a thick-frame in Figure3.3.1-3 is changed to "Offline/No error" and the "Running node" becomes blanked.

```
$ sudo clstatus

<snip>

--Resource Group Status--
Resource group name      : node0
Resource group status    : Online/No error
Running node             : node0

Resource group name      : node1
Resource group status    : Offline/No error
Running node             :
```

Figure 3.3.1-3 Execution Example of the clstatus Command (after executing rgstop)

(5) If this procedure is executing due to failure determination, execute the procedure after removing the cause of the error.
If this procedure is executing in the restoration procedure, execute the subsequent procedures from this process.

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(6) After the failure restoration, start up the resource group forcibly stopped at the step (3). Execute rgstart command by putting the "Resource group name" that is stopped at the step (3) as an argument, as shown in Figure 3.3.1-4.
When a message ID is displayed, refer to Maintenance Tool "2.52.3 Command termination messages and action to be taken" (MNTT 02-2900).

```
$ sudo rgstart node1
```

Figure 3.3.1-4 Execution Example of the rgstart Command

(7) Execute clstatus command again, and check that the "Resource group status" circled with a thick-frame in Figure 3.3.1-5 is changed to "Online/No error", and the "Running node" matches with the "Resource group name" specified at the step (6).

```
$ sudo clstatus

<snip>

--Resource Group Status--
Resource group name       : node0
Resource group status     : Online/No error
Running node              : node0

Resource group name       : node1
Resource group status     : Offline/No error
Running node              : node1
```

Figure 3.3.1-5 Execution Example of the clstatus Command (after executing rgstart)

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3.3.2 Operation only in the Virtual Server

HDI does not support Virtual Server.

3.3.3 Operation both in the Physical node and in the Virtual Server

HDI does not support Virtual Server.

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3.4 Operation determination of the Physical node

(1) Perform the clstatus command and if the node in which “Online/No error” is displayed in “Resource group status” under “--Resource Group Status--” as shown in Figure 3.4-1 exists, it is operated in the Physical node.

```
$ sudo clstatus

< partially omitted >

--Resource Group Status--
Resource group name        : node0
Resource group status      : Online/No error
Running node               : node0

Resource group name        : node1
Resource group status      : Online/No error
Running node               : node0
```

The operation is performed in the Physical node because “Online/No error” node exists in “Resource group status”.

Figure 3.4-1 Execution Example of the clstatus Command (in case of the operation in the Physical node)

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Chapter 4 Appendix B Confirmation of Management-Related Network Communication by the Maintenance Personnel

If a failure occurs and communication with the management-related network (management port/BMC port (*1)) cannot be performed, it must be determined whether the failure is caused by a hardware failure or a software failure such as invalid setting of the IP address or invalid entry definition of the routing table.
The procedure of confirming the management-related network communication is shown below.
This procedure can be executed if the OS version is 3.1.0-XX or later. For confirming the OS version, refer to Maintenance Tool "2.34 Displaying the Version of the OS (versionlist)" (MNTT 02-2060).
If the OS version is earlier than 3.1.0-XX, request the system administrator to confirm the OS version.

*1: In the BMC direct connection configuration, the management port only.

4.1 Confirming Network Communication

(1) Confirm that an LED between the management port/the BMC port and the management LAN IP-SW is on /flashing in each of the nodes. In the BMC direct connection configuration, confirm that LED between the management port and the management LAN IP-SW is on /flashing.
If the LED is off, there might be a hardware failure. Therefore, do not perform the following procedure and perform "C.2.2 Determination Procedure when a Failure Occurred".

(2) Confirm the IP address of the management port and the BMC port in each of the nodes. In the BMC direct connection configuration, confirm the IP address of the management port.
Log in to the node via ssh from the maintenance PC. For the details of how to log in, refer to Maintenance Tool "1.3.2 Logging in to a node for executing commands" (MNTT 01-0200).
If you cannot log in, there might be a hardware failure. Therefore, perform "C.2.2 Determination Procedure when a Failure Occurred".
For the IP address of the management port, execute the mngiflist command as in Figure 4.1-1 to confirm that the IP address and the net mask (the prefix length in case the IPv6 is specified) are correct.
If the above information is correct, write down the IPv4 address of the management port marked by a thick line. Also write down the IPv6 address if it is set.
If there is any mistake, execute the ownmngifedit command and set the correct IP address and subnet mask (the prefix length in case the IPv6 is specified). For the details of the ownmngifedit command, refer to Maintenance Tool "2.12 Setting the Management Port Information (ownmngifedit)" (MNTT 02-0840).
If the above information is not displayed for both of the nodes, log in to the other node and reexecute the mngiflist command. For the details of the mngiflist command, refer to Maintenance Tool "2.11 Displaying the Management Port Information (mngiflist)" (MNTT 02-0800).

```
$ sudo mngiflist
Interface                : mng0
node 0(T119000010)
[IPv4]
 Fixed IP addr           : 192.168.0.20
 Netmask                 : 255.255.255.0
[IPv6]
 Fixed IP addr           : 2001:2c0:418:1::1
 Prefix length           : 64
node 1(T119000011)
[IPv4]
 Fixed IP addr           : 192.168.0.21
 Netmask                 : 255.255.255.0
[IPv6]
 Fixed IP addr           : 2001:2c0:418:1::2
 Prefix length           : 64
MTU                      : 1500
```

Write down the IPv4 and IPv6 addresses of each of the nodes.

Figure 4.1-1 Execution Example of the mngiflist Command (in case IPv6 is set)

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(3) Perform communication confirmation between the nodes.
For each of the IP addresses written down at step (2), execute the nasping command, and confirm that communication can be performed with the management port and the BMC port (in the BMC direct connection configuration, the management port only) of the other node. For the details of the nasping command, refer to Maintenance Tool "2.7 Checking Network Connection Status (nasping)" (MNTT 02-0410).

(a) As shown in Figure 4.1-2, specify the IPv4 address of the management port of the node1 in the node0, and execute the nasping command.

```
$ sudo nasping 192.168.0.21
```

Figure 4.1-2 nasping Specification Example (communication confirmation from node0 to node1 of IPv4 address)

In case the IPv6 address is set, specify the IPv6 address as shown in Figure 4.1-3 and execute the nasping command

```
$ sudo nasping -6 [2001:2c0:418:1::2]
```

Figure 4.1-3 nasping Specification Example (communication confirmation from node0 to node1 of IPv6 address)

(b) As shown in Figure 4.1-4, specify the IPv4 address of the BMC port of the node1 in the node 0, and execute the nasping command (not required to perform in the BMC direct connection configuration.)

```
$ sudo nasping 192.168.0.23
```

Figure 4.1-4 nasping Specification Example (communication confirmation from node0 to node1)

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(c) In the node1, as step (a), specify the IPv4 address of the management port of the node0, and execute the nasping command. In case the IPv6 address is set, specify the IPv6 address and also execute the nasping command.

(d) In the node1, as step (b), specify the IPv4 address of the BMC port of the node0, and execute the nasping command (not required to perform in the BMC direct connection configuration.)

The action to be taken is different depending on the execution result of the nasping command.

[In case communication succeeded]

If all the results of confirmation by the nasping command from (a) to (d) (in the BMC direct connection configuration, (a) and (c)) indicate that communication succeeded as shown in Figure 4.1-5 and Figure 4.1-6, perform the rest of the operation.

```
$ sudo nasping 192.168.0.21
PING 192.168.0.21 (192.168.0.21) 56(84) bytes of data.
64 bytes from 192.168.0.21: icmp_seq=1 ttl=64 time=3.88 ms
64 bytes from 192.168.0.21: icmp_seq=2 ttl=64 time=0.090 ms
64 bytes from 192.168.0.21: icmp_seq=3 ttl=64 time=0.089 ms
・ ・ ・ ・ ・

--- 192.168.0.21 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 8999ms
rtt min/avg/max/mdev = 0.089/0.484/3.888/1.134 ms
```

Figure 4.1-5 Execution Example of the nasping Command (in case IPv4 address is specified and communication succeeded)

```
$ sudo nasping -6 [2001:2c0:418:1::2]
PING 2001:2c0:418:1::2 (2001:2c0:418:1::2) 56 data bytes
64 bytes from 2001:2c0:418:1::2: icmp_seq=1 ttl=64 time=0.023 ms
64 bytes from 2001:2c0:418:1::2: icmp_seq=1 ttl=64 time=0.027 ms
64 bytes from 2001:2c0:418:1::2: icmp_seq=1 ttl=64 time=0.027 ms
・ ・ ・ ・ ・

--- 2001:2c0:418:1::2 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 8999ms
rtt min/avg/max/mdev = 0.021/0.026/0.035/0.007 ms
```

Figure 4.1-6 Execution Example of the nasping Command (in case IPv6 address is specified and communication succeeded)

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[In case communication failed 1]

If any of the results of confirmation by the nasping command from (a) to (d) (in the BMC direct connection configuration, (a) and (c)) indicates that communication failed as shown in Figure 4.1-7 and Figure 4.1-8, review the IP address specified when executing the command and reexecute. If connection fails in spite of reexecution, refer to Maintenance Tool "4.2 Confirmation in Case Communication Failed" (MNTT 04-0040).

```
$ sudo nasping 192.168.0.21
PING 192.168.0.21 (192.168.0.21) 56(84) bytes of data.
From 192.168.0.20 icmp_seq=1 Destination Host Unreachable
From 192.168.0.20 icmp_seq=2 Destination Host Unreachable
From 192.168.0.20 icmp_seq=3 Destination Host Unreachable
・・・・・

--- 192.168.0.21 ping statistics ---
10 packets transmitted, 0 received, +9 errors, 100% packet loss, time 9004ms, pipe 3
```

Figure 4.1-7 Execution Example of the nasping Command (in case IPv4 address is specified and communication failed) (1)

```
$ sudo nasping -6 [2001:2c0:418:1::2)
PING 2001:2c0:418:1::2 (2001:2c0:418:1::2) 56 data bytes
From 2001:2c0:418:1::20 icmp_seq=1 Destination unreachable: Address unreachable
From 2001:2c0:418:1::20 icmp_seq=1 Destination unreachable: Address unreachable
From 2001:2c0:418:1::20 icmp_seq=1 Destination unreachable: Address unreachable
・・・・・

--- 2001:2c0:418:1::2 ping statistics ---
10 packets transmitted, 0 received, +10 errors, 100% packet loss, time 9036ms
```

Figure 4.1-8 Execution Example of the nasping Command (in case IPv6 address is specified and communication failed) (1)

[In case communication failed 2]

If any of the results of confirmation by the nasping command from (a) to (d) (in the BMC direct connection configuration, (a) and (c)) indicates that communication failed as shown in Figure 4.1-9 and Figure 4.1-10, review the IP address specified when executing the command and reexecute. If connection fails in spite of reexecution, refer to Maintenance Tool "4.2 Confirmation in Case Communication Failed" (MNTT 04-0040).

```
$ sudo nasping 192.168.0.21
PING 192.168.0.21 (192.168.0.21) 56(84) bytes of data.

--- 192.168.0.21 ping statistics ---
10 packets transmitted, 0 received, 100% packet loss, time 8999ms
```

Figure 4.1-9 Execution Example of the nasping Command (in case IPv4 address is specified and communication failed) (2)

```
$ sudo nasping -6 [2001:2c0:418:1::2]
PING 2001:2c0:418:1::2 (2001:2c0:418:1::2) 56 data bytes

--- 2001:2c0:418:1::2 ping statistics ---
10 packets transmitted, 0 received, 100% packet loss, time 8999ms
```

Figure 4.1-10 Execution Example of the nasping Command (in case IPv6 address is specified and communication failed) (2)

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4.2 Confirmation in Case Communication Failed

(1) Log in to the node where communication failed as shown in Figure 4.2-1, execute the nasnetstat command, and confirm that no invalid routing setting of the management port is included and that no invalid routing information is set.
Check the route displayed in the routing table from top and confirm the route matching the specified IP address and the net mask (the prefix length in case IPv6 is set) of the management port. If a gateway is set in the relevant route, confirm by the nasping command that communication with the gateway is possible.
If multiple routes matching the specified management port exist, the route closest to top is applied to communication.
If multiple routes of the same segment are displayed as marked by a thick line in Figure 4.2-2, one of the route might be invalid, and therefore request the system administrator to review the routing setting.
If the routing setting is correct, proceed to step (2).

```
$ sudo nasnetstat -r
Kernel IP routing table
Destination     Gateway     Genmask         Flags   MSS  Window  irtt Iface
10.0.1.0        *           255.255.255.224 U         0       0       0 hb0
10.0.1.0        *           255.255.255.0   U         0       0       0 hb0-br
10.197.181.0    *           255.255.255.0   U         0       0       0 pm0
192.168.0.0     *           255.255.0.0     U         0       0       0 mng0-br
```

Figure 4.2-1 Execution Example of the nasnetstat Command (routing table list)

```
$ sudo nasnetstat -r
Kernel IP routing table
Destination     Gateway     Genmask         Flags   MSS  Window  irtt Iface
192.168.0.0     192.168.0.30 255.255.255.255 UGH         0       0       0 mng0-br
10.0.1.0        *           255.255.255.224 U         0       0       0 hb0
10.0.1.0        *           255.255.255.0   U         0       0       0 hb0-br
10.197.181.0    *           255.255.255.0   U         0       0       0 pm0
192.168.0.0     *           255.255.0.0     U         0       0       0 mng0-br
```

Figure 4.2-2 Execution Example of the nasnetstat Command (routing table list)

(2) Get the system administrator to directly connect the management LAN IP-SW and the maintenance PC and confirm that no failure or mistake is included in the customer environment.
In case of the management LAN IP-SW owned by the customer, also request the confirmation whether the MTU value and the negotiation mode of the IP-SW match the MTU value and the negotiation mode of the management port.

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